

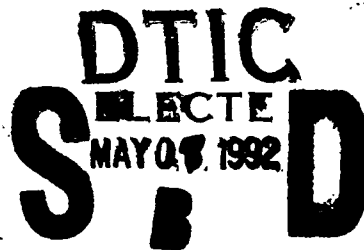
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New Orleans District

Cultural Resources Series
Report Number: COELMN/PD-91/07



**ARCHEOLOGICAL SURVEY AND TESTING IN THE
HOLY CROSS HISTORIC DISTRICT, NEW
ORLEANS, LOUISIANA
VOLUME I**

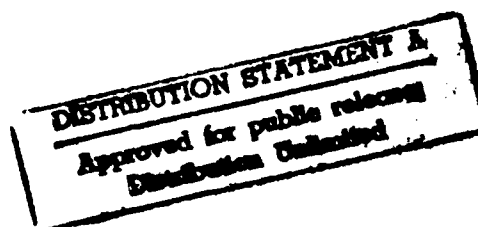
Final Report

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report summarizes the results of field work within a portion of the Holy Cross Historic District. The study area consisted of approximately 26 acres. Shovel tests and units were dug within four city squares which were assigned state site numbers 160R130-134. Excavations and data analyses indicate that archeological deposits and features are associated with several components (a nineteenth century brickyard and slave quarters, late-19th- to early-20th century residences, commercial establishments, and truck farms) and that these deposits exhibit the quality of integrity. In addition, they are significant because of their research potential. These deposits and features contain artifacts which could further our understanding of lifeways from approximately 1800 to 1920. Because the archeological resources are significant, detailed recommendations are provided in the report concerning mitigative data recovery in the event that construction in the study area becomes necessary.					
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DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

October 30, 1991

REPLY TO
ATTENTION OF:

Planning Division
Environmental Analysis Branch

To The Reader,

This cultural resources effort was designed, funded, and guided by this office as part of our cultural resources management program. Documented in this report is an archeological survey and testing program in the western edge of the Holy Cross Historic District, a district listed in the National Register of Historic Places. The study area was limited to that portion of the historic district which may be physically impacted by the proposed replacement of the Inner Harbor Navigation Canal (IHNC) Lock.

The primary objective of the research was to evaluate the integrity and research potential of the archeological deposits existing in the study area. That goal was achieved and we agree with the authors' conclusion that significant archeological resources exist in the study area. The final chapter of the report presents a research design which will guide archeological data recovery should such efforts be required by plans to replace the IHNC Lock.

This report is only one of several studies concerning the impacts of the proposed new IHNC Lock on historic properties. The results of this study, along with those of others completed or underway, will serve as the bases for consultation with the Louisiana State Historic Preservation Officer and the Advisory Council on Historic Preservation pursuant to 36 CFR Part 800. The anticipated result of this consultation will be a Memorandum of Agreement which specifies the mitigation measures to be implemented for this project.

The analyses presented in this report are comprehensive and of high quality. We compliment the contractor on a job well done.

Michael E. Stout
Authorized Representative
of the Contracting Officer

R. H. Schroeder, Jr.
Chief, Planning Division

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Finally, Mr. Michael Stout and Dr. Edwin Lyon served as liaisons between the Corps of Engineers and the authors.

CHAPTER 1 INTRODUCTION

This report was prepared by Earth Search, Inc., pursuant to a delivery order issued under contract DACW29-90-D-0017 by the U.S. Army Corps of Engineers, New Orleans District. The New Orleans District anticipates replacement of the present lock system at the Inner Harbor Navigation Channel. The project area (Figure 1) under discussion in this report may be subjected to subsurface impacts related to construction.

In 1991, the Museum of Geoscience of Louisiana State University submitted to the New Orleans District a final report that included a research design for archeological investigations within the study area (Franks et al. 1991). The Scope of Services (Appendix I) which guided the present project requested that Earth Search, Inc., conduct field investigations to examine the significance and integrity of archeological deposits which archival research and reconnaissance level investigation by Franks et al. (1991) indicated might be present.

Prior to field investigations, various historic maps of the study area were digitized by the CADGIS Laboratory at the Louisiana State University College of Design. Results were used to refine predictions made by Franks et al. (1991) concerning locations of suspected historic features. Historic research indicated that a number of these features were likely to be present within Square 122, as well as portions of Squares 189 and 232. Predicted features included remains of a nineteenth-century brickyard, a slave quarters, a truck farm, and post-1869 residential lots. The New Orleans District obtained right-of-entry to those areas.

Site maps were prepared for these areas, and shovel tests were excavated at 5 m gridded intervals. Subsequently, three units were excavated within these squares. The results confirmed predictions based on historic research and computerized map research. Excavations also indicated that subsurface archeological deposits in these areas have integrity and further research potential (criterion d) in that they could yield information that would advance our understanding of history (National Park Service 1982).

Another goal of the research effort undertaken by Earth Search, Inc., was to determine whether significant archeological deposits were present in residential and



Figure 1. Excerpt from the 1979 USGS New Orleans East 7.5' quadrangle showing the study area (outlined by dotted line). Cross-hatching denotes the Holy Cross Historic District.

commercial lots where structures are still standing. The New Orleans District provided Earth Search, Inc., with ownership information for selected lots which Franks et al. (1991) had predicted might contain significant deposits. Earth Search, Inc., then obtained right-of-entry to some of those lots and excavated shovel tests at 5 m gridded intervals. An excavation unit was placed within one of the lots. Results of this effort indicated that archeological deposits and features are present within such lots in the study area. The results also indicated that these deposits and features exhibit the qualities of integrity and research potential, both of which are necessary for archeological sites to be considered eligible for inclusion on the National Register of Historic Places (National Park Service 1982).

Excavations were not conducted within every lot or square that may be impacted by construction. However, archival research indicates that since 1869, land use has been similar on all of the squares. Therefore, the sample of squares and lots where excavations were conducted is considered to be representative of the study area as a whole.

The present document represents a detailed report of historical and archeological investigations within the study area. Because archival and field research indicate that significant archeological deposits are present, and because these deposits exhibit the quality of integrity, it is recommended that a program of data recovery be carried out if modifications to the Inner Harbor Navigation Canal require subsurface disturbance within the study area. This report includes detailed recommendations concerning the appropriate level of effort for that program.

CHAPTER 2 GEOLOGY AND GEOMORPHOLOGY OF THE STUDY AREA

**by Dr. Joanna Mossa
(condensed and edited by H.A. Franks)**

The geology and geomorphology of the study area were previously reviewed in detail by Dr. Joanna Mossa (in Franks et al. 1991). This chapter summarizes that review. The project area (Figure 1) is located adjacent to the Mississippi River near the east or left descending bank in a section of the Mississippi River delta plain which was deposited only a few thousand to a few hundred years ago.

The Mississippi River delta plain consists of deposits of abandoned and active deltas and channels of the Mississippi River. These partially-overlapping delta complexes and lobes are the product of shifting of the Mississippi River during the Holocene. The delta plain is characterized by elevations near sea level, by lakes and lake systems, by active and ancient distributary channels of the river, by numerous tidal bayous, and by numerous islands. Some islands are evidence of the deterioration of broad marsh areas into isolated remnants, and others are transgressive sandy barrier islands located at the seaward edge of the delta plain and in the Gulf of Mexico.

The geologic history of the project area has been strongly influenced by sea level fluctuations in the Gulf of Mexico and the shifting of the Mississippi River and its distributaries. Sea level fluctuations influenced the slopes, and therefore the load and channel characteristics, of rivers draining into the oceans. During lowering of sea level, the streams cut deep trench-like valleys. During the succeeding rising sea level, these valleys were alluviated. About 35,000 to 40,000 years ago, the environment of the project area was similar to that a few miles offshore the modern Louisiana shoreline in the Gulf of Mexico, and thus was characterized as nearshore marine.

When sea level was approximately 300 ft (90 m) below the present level, during the Wisconsinan or latest Pleistocene deglaciation, the Mississippi valley became deeply incised within coastal plain sediments (Fisk 1944). The mid-Wisconsinan nearshore zone and seafloor were exposed to subaerial weathering and developed well-oxidized and consolidated soils. During the glacial maximum, between 20,000 and 17,000 years

B.P., the Mississippi River north of the project area had a braided pattern. A braided stream regimen may have persisted as far south as the Gulf coast, but this has not been established with certainty (Saucier 1974). Sea level began to rise persistently after the glacial maximum, and the alluvial sequence shows an upward decrease in particle size, resulting, in part, from the progressive decrease in slope brought about by rising sea level and consequent filling of the valley. The deposits provide evidence of a gradational reduction in the carrying capacity of the master stream (Fisk 1947), and they reflect a great wave of alluviation which slowly spread upstream.

Deltaic development of the Holocene Mississippi River commenced when the rise in sea level began to occur more slowly. The delta plain consists of six major Holocene delta complexes, each initially experiencing a constructive phase and then undergoing a destructive phase. Some evidence indicates that older complexes and lobes are also buried by these six younger delta complexes. Four of these complexes, namely, the Maringouin, Teche, St. Bernard, and Lafourche, are in various stages of deterioration. Two of these complexes, the Modern and Atchafalaya, are actively prograding or outbuilding. Each major course or belt of the Mississippi River, which shifted to a channel with a steeper gradient every 1000 to 1500 years during the Holocene, is associated with a delta complex. The early Holocene meander belts of the Mississippi River occupied courses in the western portion of the delta plain, and later meander belts have occupied courses in the eastern part of the delta plain. The individual lobes within each complex are the products of distributary networks (Frazier 1967). Subdeltas are important components of the delta lobes which in turn are the components of delta complexes. Subdelta deposits vary in areal extent from small splays to minor subdeltas to major subdeltas.

The constructive phase begins when a platform is developed as sediments are dispersed and deposited onto the inner continental shelf. The platform is built up by flooding, with flood deposition being thickest adjacent to the channel or distributary. Sediments deposited on the outside of bends during overbank stages form natural levees. These are alluvial ridges which slope away from the river and which are composed principally of fine sand and silt. Natural levees coalesce and increase in elevation with increased time of meander belt occupation. As the natural levees build up, they confine increasingly higher amounts of water

until only high floods are capable of overtopping the levees and providing flow to backswamp areas. Vegetative growth increases in backswamp areas once the floodplain stabilizes, and organic peats accumulate more rapidly. Fine sand and silt may also accumulate in crevasse splays. These are deposited in clayey or mucky backswamps and marshes when levees are breached during floods.

Upstream diversion eventually occurs when the channel shifts to a shorter course. The destructive phase of the delta complex is initiated because of lack of sediment supply, when increased subsidence occurs from compaction and dewatering. Marine processes rework the seaward edge of the abandoned delta complex, concentrating the sand-sized sediments into a transgressive barrier shoreline (Kwon 1969; Penland et al. 1981). The transgressive barrier shoreline consists of an erosional headland of barrier beaches and marginal spits that are typically flanked by barrier islands. With increased subsidence and erosion in the backbarrier region, the barrier shorelines may become disconnected from the headland and form barrier island chains. Ultimately, these may become submerged, forming inner shelf shoals.

Geologic environments in the Mississippi River delta plain and in the project area that were recognized by Fisk (1947) are meander belt deposits including point bar environments, topstratum and slough, abandoned channel environments including chute cut-offs and neck cut-offs, natural levee deposits, and backswamp deposits. Environments mapped by Kolb (1962) include natural levee, inland swamp, fresh water marsh, fresh to brackish water marsh, saline to brackish water marsh, floating marsh or flotant, abandoned course or distributary, recent point bar consisting of predominantly sandy deposits, and ancient point bar consisting of predominantly silty deposits.

The history of man-made structures in the Mississippi River valley dates back to the eighteenth century, beginning with artificial levee construction. According to Elliott (1932), New Orleans was the location of the first artificial levee on the Lower Mississippi River. The city was founded in 1717 by Bienville who selected the site despite the objections of his engineer, De La Tour, who predicted periodic inundation during floods. De La Tour undertook construction of the first levee and completed the

project in 1727. The levee was 5400 ft long, 3 ft high, and 18 ft wide at the top with a roadway on its crown.

By 1735, as settlements developed, the artificial levees on both sides of the river extended about thirty miles upstream and about twelve miles downstream from New Orleans. By 1812, the levee system on both sides of the river had been extended to Baton Rouge on the left bank, and to the vicinity of Morganza on the right. Crevasses of the levees were a common occurrence during these earlier years. With the completion of more and larger levees, flood stages reached new heights. New Orleans was inundated several times, and there was considerable concern that the river bed was being silted in between the levees. It was soon recognized, however, that these new flood heights were a natural result of confining the river between levees. Where the river had formerly been allowed to spread out across the floodplain, thereby lowering stages, it was now confined to a narrow zone between the artificial levees.

By 1851, the west bank was protected almost continuously with levees from New Orleans to the Arkansas River. The east bank was protected as far north as Memphis (Elliott 1932). The levees have been raised repeatedly with successive floods. The present levee system in the vicinity of New Orleans is in some places 25 ft high and close to 5000 ft in cross-sectional area. It has been quite effective during the twentieth century in preventing flooding and eliminating overbank deposition. The New Orleans area has since been altered from a predominantly wetland to an increasingly terrestrial environment. This alteration is due largely to human activities including construction of ring levees and the development of drainage pumping systems to reduce the effects of floods and storm surges.

The project area itself is located across from Algiers near river mile 92.5 on the east or left descending bank of the Mississippi River in Orleans Parish, Louisiana near the Inner Harbor Navigation Canal. In the proposed project area, elevations range from over 20 ft (6 m) above mean sea level on the crests of artificial levees to below sea level both in urban areas surrounded by hurricane protection levees and on land exposed only during extreme low water stages along the Mississippi River.

Near-surface deposits in the project area are a product of the St. Bernard and Plaquemines-Balize or

Modern delta complexes and the corresponding meander belts of the Mississippi River. The St. Bernard complex ranges in age from 4500 years B.P. to about 1800 years B.P. (Frazier 1967). The Plaquemines-Balize delta complex initiated approximately 950 years B.P., and is actively prograding at present. Although much of the St. Bernard and Plaquemines-Balize delta complexes and the modern Mississippi delta have been deposited in a subdelta environment, the project area has principally been influenced by deposition adjacent to the Mississippi River channel. The area of proposed construction consists of natural levee deposits (Kolb 1962). Abandoned distributaries occur in the vicinity of mile 94.5, 89.5, mile 85.8, and mile 82.0 on the left bank. The distributary at mile 82.0 is associated with one of the more prominent delta lobes of the St. Bernard delta complex (Saucier 1963).

The principal soil map unit in the project area is the Sharkey-Commerce association (USDA in press). These soils are developed on natural levees adjacent to the lower Mississippi River in the delta plain. The Sharkey series consist of poorly-drained soils formed in clayey alluvium on low and intermediate positions on natural levees. The Commerce series consist of somewhat poorly-drained soils that formed in loamy alluvial sediments developed on intermediate and high positions on natural levees. The Sharkey soils are Vertic Haplaquepts with very fine textures (>60% clay) and montmorillonitic mineralogy, with more than half of the clay fraction by weight being made up of expanding-lattice clays. The Commerce series are Aeric Fluvaquents with fine-silty textures (<35% clay and <15% sand), and mixed mineralogy, where no one clay mineral dominates the clay-size fraction. In Orleans Parish, the Sharkey-Commerce map unit consists of about 70% Sharkey soils, 21% Commerce soils, and 9% soils of minor extent.

A transect perpendicular to the river near the study area along the Intracoastal Waterway shows natural levee deposits as thick as 15 ft (4.5 m). These thin with increasing distance from the river. Beneath natural levee deposits are interdistributary deposits that are more than 30 ft (9 m) thick, followed by prodelta and nearshore gulf deposits, each with thicknesses of about 15 ft (4.5 m) adjacent to the Mississippi River. Depths to the Pleistocene near the river at this transect are about 80 ft or -70 ft m.s.l. (24 m or 21 m below m.s.l.), and are in excess of 150 ft (45 m) in places in the project area. The river thalweg has depths of 70 to 200 ft below m.s.l. (20 to 60 m

below m.s.l.) in the project area, and the river is well-entrenched into the highly erosion-resistant Pleistocene deposits (Kolb 1962).

Radiocarbon (C-14) dates of peat and organic deposits collected in the vicinity of the project area are considered by Saucier (1963) to be indicative of the age of this final course of the river. Four dates associated with the bases of the natural levees (hence maximum dates) or from wood fragments from within the levee itself (sample no. 28), have produced the following dates:

<u>Location</u>	<u>Carbon-14 Date</u>	<u>Sample Type and Depth</u>	<u>Number</u>
New Orleans	1000 \pm 100	Peat -6 ft m.s.l.	14
New Orleans	1100 \pm 105	Peat -4 ft m.s.l.	16
New Orleans	1200 \pm 100	Wood -10 ft m.s.l.	28
New Orleans	1450 \pm 105	Peat -4.5 ft m.s.l.	12

The average of these dates, approximately 1200 years B.P., is believed to date the establishment of the modern river course (Saucier 1963).

In the vicinity of the project area, natural levees, which are created by near-channel deposition of suspended sediment during overbank flow, are approximately 5 to 10 ft in elevation and 1 mile in width (Kolb and van Lopik 1958; Kolb 1962; Saucier 1963). Geologic cross-sections show that the base of the natural levee adjacent to the river in the vicinity of the project area is about -7 ft m.s.l. to -10 ft (Kolb 1962). Sediments at these depths should thus date to about 1200 years B.P. and decrease in age with decreasing depth. Since the crest elevation of the natural levees at these locations are about 10 ft and 4 ft, if sedimentation throughout this period were uniform, deposition in places where levee thickness was a maximum would average between 1 and 1.5 ft (30 to 45 cm) per century. Sedimentation rates were probably high during the early stages of levee development, subsequently decreased as the elevation grew higher, and then increased again once these areas were confined by artificial levees. Away from the crests of the natural levees, sedimentation rates would be lower, and would be proportional to the thickness of levee deposits at that location.

Although the project area is not subject to overbank sedimentation presently, it was subject to overbank sedimentation prior to major levee construction. Recent studies have shown that overbank sedimentation in unconfined reaches of the Mississippi River, i.e. reaches without artificial levees that would confine floodwaters, can be appreciable during high discharge years. In the flood of 1973, sedimentation averaged 34 in (86 cm) on point bars, 21 in (53 cm) on natural levees, and 0.43 in (1.1 cm) in the backswamp (Kesel et al. 1974). Sedimentation in confined reaches could possibly exceed that of unconfined reaches because they are subject to flooding on a more frequent basis.

Channel discharge and stage in the lower Mississippi River are markedly seasonal, with low flow occurring in the summer and fall, and high flow during the winter and spring. In the vicinity of the project area, the maximum discharge of record (1872 to present) at Carrollton (mile 102.8) is 1,557,000 cfs (May 18, 1927) with a corresponding stage of 20.5 ft (6.7 m). Mean discharge over this period is 425,000 cfs, and minimum discharge is 49,200 cfs (November 1, 1939) (Keown et al. 1977; USACE 1985). The effect of tides increases downstream and is noticeable as far upstream as 35 mi (56 km) above Baton Rouge during extreme low water (Kolb 1962). During historic times, the Mississippi River has approached the crest of the artificial levee on several occasions. Stage elevations in the vicinity of the project area at Chalmette (mile 91.0) exceed 7 ft (2.1 m) on an annual basis, and the highest recorded stages were 19.8 ft (6.04 m) during the flood of 1927 on April 25 and 26.

Relative sea level has risen since the late Wisconsin deglaciation, and subsidence has been an active process since abandonment of the St. Bernard delta. Kolb (1958) suggests that the single most important cause of subsidence in this region is the consolidation of high-water content prodelta clays. In recent years, numerous scientific investigations have attempted to quantify subsidence and sea level rise rates. Kolb and van Lopik (1958) suggest a combined subsidence and sea level rise of 0.8 ft/century (24 cm/century) for the delta plain south of English Turn. Saucier (1963) determined an overall rate of 0.4 ft/century (12 cm/century) for the Pontchartrain basin. Watson (1982) determined from benchmark data that subsidence was 1.3 ft/century (40 cm/century). Ramsey and Moslow (1987) estimated from tide gauge data that relative sea level rise in Orleans Parish ranged from

about 0.2 to over 0.4 in/yr (0.5 to 1.0 cm/yr) from 1962 to 1982. Assuming the subsidence rate is between the values given previously by Kolb and van Lopik (1958) and Saucier (1963), or about 0.6 ft/century, the ground surface in this area should be about 1.5 ft lower than it was in the mid-18th century.

Channel migration is an important factor in relation to site preservation, but has not been significant in the project area. The Mississippi River has migrated very little in the proposed project area (river mile 92.5 Above the Head of Passes). The rate has been less than 100 ft/century in either direction (Torrey 1988) between the time of the 1879-94 and the 1973-75 hydrographic surveys (Figure 2). Wave wash and water-level surges caused by ship traffic are processes responsible for local bank recession (Saucier 1983) and reworking of subaqueous and subaerial sediments proximal to the river's edge. Cultural materials in these deposits that are reworked by wave wash are typically found on pocket beaches or crenulations along the river edge. The water depths from which these materials are reworked are estimated to be less than 20 ft in depth.

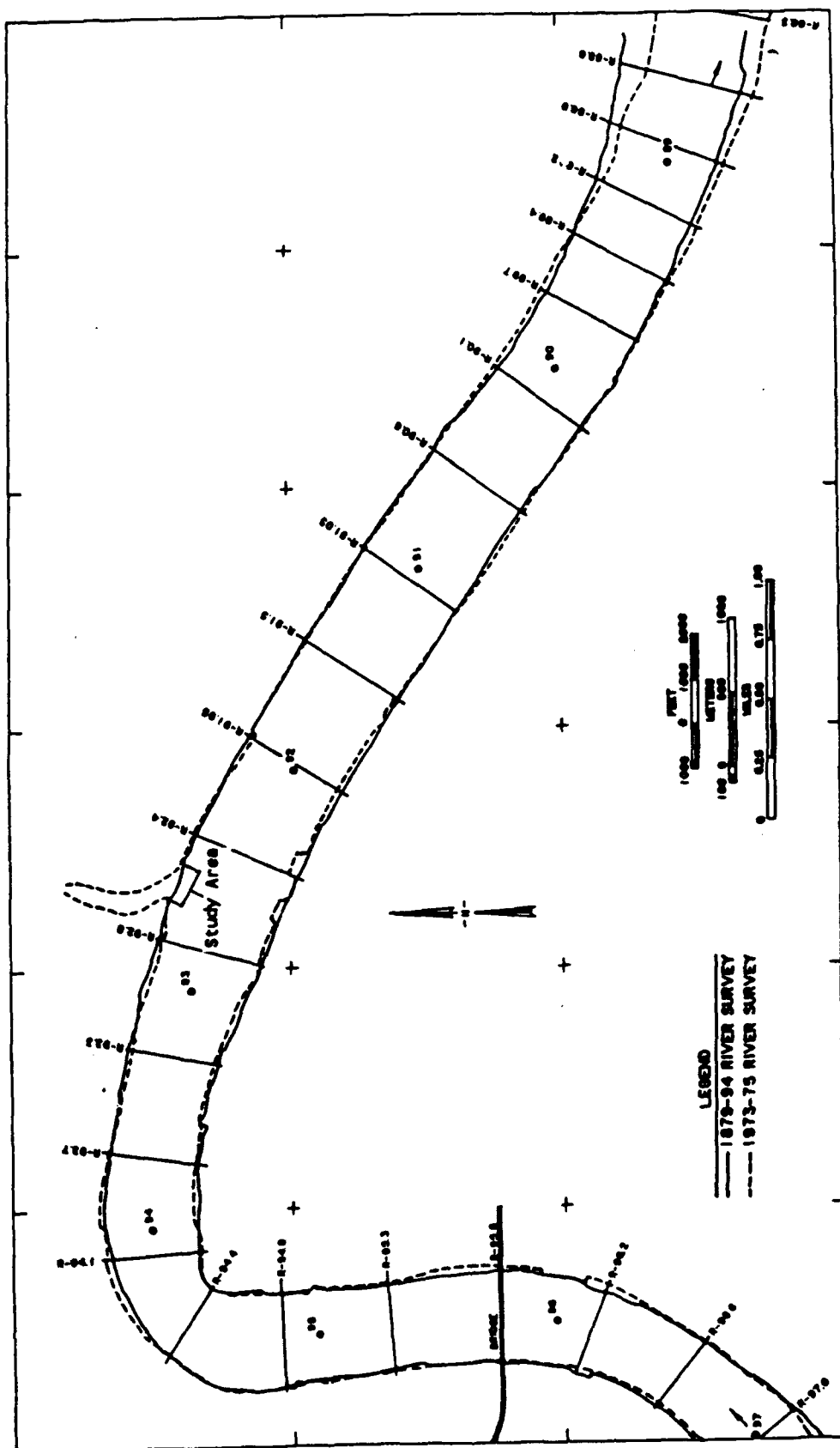


Figure 2 . Comparison of bank lines between the 1879-94 and the 1973-75 hydrographic surveys on the basis of approximate low water reference plane between miles 97 and 89.5 AHP (from Torrey 1988).

CHAPTER 3 ENVIRONMENTAL SETTING

Introduction

The present-day project corridor is a suburban residential community that lies between Sister and Deslonde Streets (Figure 1). Characteristics of the residential community were discussed in detail by Treffinger (in Franks et al. 1991) in Chapter 12 of an earlier report that included architectural evaluations. This chapter provides background information concerning general environmental conditions as well as ecology of the region prior to European settlement.

Biological Setting

The Mississippi River delta region within which New Orleans is situated is characterized by a set of ecological parameters which are integrated into a dynamic ecosystem with enormous biological productivity. The prime integrating feature of this ecosystem is water. Primary units of the system are forests, fresh water marshes, brackish marshes, saline marshes and the offshore area (Bahr and Hebrard 1976:1-3; Bahr et al. 1983).

Climate

New Orleans is located within the subtropics, and its weather is strongly influenced by the nearby Gulf of Mexico. Rainfall exceeds 160 cm (64 inches) annually. Periods of greatest rainfall generally occur in August and September. October is, on average, the driest month. The mean annual temperature is about 21° Centigrade (70° Fahrenheit), with a mean low in January averaging 11° Centigrade (52° Fahrenheit) and a mean high in July of about 29° Centigrade (84° Fahrenheit). The growing season exceeds 260 days (White et al. 1983:103).

Hurricanes and storm surges occur intermittently, and these have profound effects on floral, faunal and human communities. Although these storms are natural calamities, they also produce beneficial effects. Large amounts of sediments and nutrients are deposited into coastal estuaries, resulting in both short- and long-term increases in primary productivity (Bahr et al. 1983:22).

Hurricanes and tropical storms are characterized by low barometric pressure. This causes a significant rise in sea level. In combination with winds up to 200 or more km/hr, storm surges as great as 7 m (23 ft) can drive ocean and lake water a considerable distance inland. The flooding problem is aggravated by accompanying tropical rains (Bahr et al. 1983:23).

Plant Communities

Prior to cultivation and urbanization of the New Orleans area, upland forests would have occupied most of the natural levee. Upland forest habitat would have graded to bottomland hardwood as elevation declined and flooding frequency thereby increased. Similar plant communities remain present on the Pleistocene terrace north of Lake Pontchartrain. Natural climax vegetation in such forests is dominated by mixed deciduous and evergreen trees that are less tolerant of flooding than are bottomland hardwood species. Woody species in a natural levee forest would have included oaks (*Quercus virginiana*, *Q. alba*, *Q. nigra*), shagbark hickory (*Carya ovata*), hackberry (*Celtis laevigata*), sweetgum (*Liquidambar styraciflua*), pecan (*Carya illinoensis*), magnolia (*Magnolia spp.*), and various pines (Bahr et al. 1983:82).

As elevation declines at the edges of the natural levee, distinctively different plant communities occur. One of these is a "hardwood bottoms" community. The "cypress-tupelo" forests are located at slightly lower elevations. An intermediate swamp is sometimes located between these two communities. Large tracts of marsh occur in surrounding areas. Elevation of the land dramatically affects distribution and composition of plant communities within the area. Differences of only a few centimeters in elevation are associated with striking changes in vegetation. This is largely the result of the effects of soil saturation (White et al. 1983:102-103; Bahr et al. 1983:43-45).

Hardwood bottom forests in the area are dominated by the water oak (*Quercus nigra*). Subdominants include the sweet gum (*Liquidambar styraciflua*), hackberry (*Celtis laevigata*), and live oak (*Quercus virginiana*). Other forest species include the box-elder (*Acer negundo*), honey-locust (*Gleditsia triacanthos*), American elm (*Ulmus americana*), and the Nuttall oak (*Quercus nuttallii*). The most common shrub species are palmetto (*Sabal minor*) and green haw (*Crataegus viridis*), but thickets of possum-haw (*Ilex decidua*) also occur.

Within forest gaps, elderberry (*Sambucus canadensis*) and French-mulberry (*Callicarpa americana*) occur. Introduced species such as the camphor tree (*Cinnamom camphora*) are also present (White et al. 1983:103-104).

Vines are found throughout the bottomland forest, and few trees are observed without them. The most common of these include poison-ivy (*Rhus toxicodendron* var. *vulgaris*), Virginia creeper (*Parthenocissus quinquefolia*), supple-jack (*Berchemia scandens*), pepper-vine (*Vitis rotundifolia*), muscadine (*Vitis rotundifolia*), and hemp-weed (*Mikania scandens*) (White et al. 1983:104). Herbaceous ground cover is generally absent.

The cypress-tupelo swamps, located at lower elevations, are dominated by bald cypress (*Taxodium distichum*). Water tupelo (*Nyssa aquatica*) is often either a sub- or co-dominant species. Red maple (*Acer rubrum* var. *drummondii*) and ash trees (*Nyssa aquatica*) represent the other sub-dominants in this community. Shrubs include wax-myrtle (*Myrica cerifera*) and button-bush (*Cephalanthus occidentalis*), while vines are cat-briar (*Smilax* spp.), trumpet-creeper (*Campsis radicans*), and poison ivy. Herbaceous ground cover, absent in the bottomland community, includes smart-weed (*Persicaria punctata*), alligator-weed (*Alternanthera philoxeroides*), swamp potato (*Sagittaria lancifolia*), and water hyacinth (*Eichhornia crassipes*) (White et al. 1983:105). Maps from the eighteenth and nineteenth century indicate that dense cypress forests stood between settled areas of the natural levee and Lake Pontchartrain.

Between the hardwood bottom forest and the swamp forests, an intermediate swamp forest sometimes occurs. It can be extensive due to the gradual slope of the land. Swamp red maple, American elms, and water oaks are common here. Palmettos create a dense understory, which is nearly impenetrable in some locations (White et al. 1983:105).

The other predominant plant community in the vicinity of New Orleans occurs in the marsh areas. Marshes are categorized according to their degree of salinity. The areas covered by the various marsh communities varied through the period of prehistoric occupation due to variation in fresh water influx compared to salt water intrusion.

The ecological distinction between a swamp and a marsh is the absence of trees in the latter. Marsh

soils are peat and muck, and elevation of these is less than one meter above mean sea level in the vicinity of the study area. In the brackish or intermediate marsh, cord grass (*Spartina patens*) is dominant, while swamp-potato (*Sagittaria lancifolia*) predominates in freshwater marsh. Numerous other species co-occur with these (White et al. 1983:106-107).

Fish

Although the Mississippi River supports various species of freshwater fish, it is relatively unproductive because of high turbidities and strong currents. Freshwater sport species presently exploited in the vicinity of the project area include largemouth bass, spotted bass, yellow bass, black and white crappie, bluegill, spotted sunfish, and redear sunfish, as well as warmouth, channel, flathead, and blue catfish. Commercially exploited fish include catfish, bowfin, carp, gars, and buffaloes (U.S. Army Corps of Engineers 1984:16-17).

Waters in the estuaries in the vicinity of New Orleans host a diverse assemblage of species of fish. These species are highly mobile, and seasonal movements of fish populations are widespread. The result is that marine fish penetrate inland to fresh water habitats, while fresh water species are sometimes found in more saline environments. Also, the lower reaches of freshwater streams probably serve as nursery areas for the young of some marine species (Bahr and Hebrard 1976:6°).

Birds

At least 216 species of birds are known to occur in estuary and swamp areas in the vicinity of New Orleans. Approximately 43% of these are passerines. Some species of this group are permanent residents, while others are only present seasonally. The remainder of the 216 species are predominantly waterfowl, many of which are migratory. Because New Orleans lies near the terminus of the Mississippi flyway, which is the largest waterfowl migratory route in North America, birds represent a potentially abundant source of food, feathers, and bone for tools (Bahr and Hebrard 1976:6-7, 78-115).

Mammals

Important fur-bearing species present in the vicinity of New Orleans include the muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), mink (*Mustella vison*), and otter (*Lutra canadensis*). Other mammals known to occur in the area include the Virginia opossum (*Didelphis virginiana*), the non-indigenous nine-banded armadillo (*Dasypus novemcinctus*), the swamp rabbit (*Sylvilagus aquaticus*), the fox squirrel (*Sciurus niger*), the fox (*Vulpes fulva*), the bobcat (*Lynx rufus*), the beaver (*Castor canadensis*), the civet cat or spotted skunk (*Spilogale putoris*), and the white-tailed deer (*Odocoileus virginianus*). In addition, several species of terrestrial rodents and of bats are endemic (Bahr and Hebrard 1983:118-126). The mammalian faunal inventory would have been even more extensive during the prehistoric period (Speaker et al. 1986:26-29).

CHAPTER 4

ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA

This chapter is an abbreviated version of a more detailed review of prehistoric culture presented in Franks et al. (1991). For recent comprehensive syntheses of the prehistory of Louisiana, including the delta plain, the reader should consult Neuman (1984) and Jeter et al. (1989). For detailed reviews of historic period aboriginal groups in the vicinity of New Orleans, the reader should consult Giardino (1984) and Kniffen et al. (1987).

The Poverty Point Period (1500 B.C. to 500 B.C.)

The earliest known site in Orleans Parish is dated to the Poverty Point Period. It is known as the Linsley Site (16OR40) and is situated on a buried natural levee associated with an earlier course of the Mississippi River. Material dredged from the subsided *Rangia* midden was used to define the Bayou Jasmine-Garcia Phase of the Poverty Point Culture (Gagliano et al. 1975:44-47). A series of radiocarbon dates and baked clay balls are evidence that link the site with the Poverty Point period (Weinstein 1978:A/23-A/25, Thomas 1982:3).

The name "Poverty Point" is derived from the type site, an area of massive earthwork construction, in northeastern Louisiana. This site is believed to have been a cultural center with trade networks and influence extending throughout the Lower Mississippi Valley. Baked clay balls known as "Poverty Point objects" are one of the important traits that mark the period. Other traits include an elaborate lapidary and microlithic industry, use of steatite vessels, and the use of exotic stone (Thomas 1982:5).

The Tchula Period (500 B.C. to A.D. 0)

Tchula period occupations in the Lower Mississippi Valley are associated with the Tchefuncte culture. The period has been called "the early ceramic period" because, with the exception of fiber-tempered pottery, it was the interval during which initial pottery complexes appeared in the Lower Mississippi Valley. Sites are few and scattered, and there are no universal markers. However, within subareas such as South Louisiana, regional markers, primarily Tchefuncte type ceramics, have been identified (Phillips 1970:7, 8, 15, 76).

Peoples of the Tchefuncte culture were the first to engage extensively in the manufacture of ceramics. Fiber-tempered and some grog-tempered or temperless sherds have been recovered from earlier Poverty Point contexts. These may represent primarily trade goods from the earliest pottery-making cultures to the east. The basic Tchefuncte ware is temperless or grog-tempered, with accidental inclusions of small quantities of sand and vegetable fiber. Sand-tempered wares represent a minority constituent of Tchefuncte site assemblages (Shenkel 1984:47-48).

The Marksville Period (A.D. 0 to A.D. 300)

The Marksville period is associated with a Hopewellian culture and tradition manifested throughout the Lower Mississippi Valley (Phillips 1970:7, 17-18, 886). The Hopewell culture's two major centers of development were in Ohio and Illinois, and date to between 200 B.C. and A.D. 400. Diffusion of aspects of the culture may have resulted from the activity of traders who established a wide-ranging network, sometimes termed the "Hopewellian Interaction Sphere." In addition to diagnostic pottery types of the Marksville period, conical burial mounds were characteristic of the culture. Interments are generally associated with grave goods. Some of these were manufactured from exotic raw materials (Neuman 1984:142-168).

The Baytown Period (A.D. 300 to A.D. 700)

The Baytown period has been defined as the interval between the end of Hopewellian/Marksville culture and the emergence of Coles Creek culture. In the southern half of the Lower Mississippi Valley, there are no area-wide horizon or period markers (Phillips 1970:901). The Baytown period is often referred to as the "Troyville period" by Delta archeologists. Because of the lack of diagnostic markers for the period in southeastern Louisiana, it is often assimilated with the subsequent Coles Creek period, and the two are together referred to and discussed as "Troyville/Coles Creek cultures" (e.g. Neuman 1984).

The Coles Creek Period (A.D. 700 to A.D. 1000)

The Coles Creek period is the interval that begins with the emergence of Coles Creek culture in the southern part of the Lower Mississippi Valley and ends with the establishment of "full-blown" Mississippian

culture in the northern part of the Valley (Phillips 1970:18). Although it appears to represent a population zenith in the eastern delta province, many sites tentatively classified as Coles Creek may actually be from the Baytown period (Wiseman et al. 1981:3/5).

Coles Creek culture was characterized by small ceremonial centers with mounds. These were surrounded by villages of varying size. The culture developed in the area between the mouth of the Red River and the southern part of the Yazoo Basin. Its influence filtered into the delta region of southeastern Louisiana (Brown 1984:95). Mounds associated with the Coles Creek culture generally are larger and exhibit more construction stages than those associated with the earlier Marksville culture. A more significant difference is that Coles Creek mounds are pyramidal and flat-topped, and they were used as substructures for religious and/or civic buildings. In contrast, Marksville peoples generally built conical burial mounds (Neuman 1984:167).

The Mississippi Period (A.D. 1000 to A.D. 1700)

The beginning of the Mississippi period is marked by the emergence of Mississippian culture in the northern part of the Lower Mississippi Valley and Plaquemine culture in the southern part (Phillips 1970:18-19). The Plaquemine culture itself is sometimes considered to be the classic development of temple mound construction in the lower portion of the Lower Mississippi Valley. However, archeological excavations suggest that it actually represents a late prehistoric development of the preceding Coles Creek culture. Multi-mound construction and artifact assemblages are evidence that link the two. Absence of European trade goods indicates that the Plaquemine culture reached its zenith prior to contact (Neuman 1984:258-259). Sites dated to the period of contact represent a Delta-Natchezan phase. Proportions of ceramic types change, some new styles and types appear, and European trade goods are often found in association with the aboriginal materials (Quimby 1957:118-119, 134-144).

Aboriginal Occupation during the Colonial Period

Identities and locations of Indian tribes in Louisiana cannot be determined for any period prior to about 1700. At about that time, literate French settlers and visitors began to record their observations regarding aboriginal occupants of the area. Even so, it

remains difficult to sort pre- and post-contact culture traits. This is especially true for the lesser tribes living along the Mississippi River and other areas within southeastern Louisiana (Kniffen et al. 1987:45).

The protohistoric and early historic periods were traumatic for aboriginal society in southeastern Louisiana. The effects of disease and of the ever-increasing European population are reflected in the declining aboriginal population and in the migrations by remnants of various tribes. Internecine warfare typified relations between the various groups (Giardino 1984).

CHAPTER 5

A REVIEW OF PREVIOUS ARCHEOLOGICAL INVESTIGATIONS IN NEW ORLEANS

This chapter reviews results of previous archeological investigations in New Orleans in order to provide a context for present and possible future excavations within the project corridor. Recovered artifacts and features are discussed in some detail, particularly when these derive from residential occupations. In addition, the analytical and theoretical framework of previous investigations are discussed for projects in which these were explicit.

The Site of the U.S. Mint Building (16OR52)

In 1760, defense bastions connected by palisades and a continuous perimeter moat were constructed around the city of New Orleans. The system intersected the Mississippi River near the presently standing U.S. Mint building. In 1792, five pentagonal forts revetted with brick were constructed along the walls and moat. Fort St. Charles stood at 16OR52, and it was not dismantled until the years 1816 to 1821. The property served as a park in honor of General Jackson until 1835 when the U.S. Mint building was erected. Mint officers were allowed to live on the grounds until 1888. During Federal occupation of New Orleans from 1862 to 1877, troops occupied and maintained quarters there. After minting operations ceased in 1909, the structure was occupied by the Veterans Bureau, the U.S. Coast Guard, and the Louisiana State Museum. During renovations in 1931, a brick footing was uncovered, and it was thought to derive from Fort St. Charles (Castille 1978:2-5).

During 1978, the Louisiana Division of Archeology excavated three test pits on the grounds of the U.S. Mint. The first unit measured 1 x 1 m, and was excavated to a depth of 30 cm. The unit was abandoned when it was determined that it had been placed directly above a sewer line. Soils appeared disturbed to a depth of 30 cm, and artifacts were primarily architectural debris and *Rangia* shells (Castille 1978:6).

A second unit was placed at the edge of the structure facing Esplanade Avenue. The unit measured 1.2 x 2.25 m, and was excavated to a depth of 1.45 m. The only feature encountered was the Mint's stepped brick footing. Tin-enameled earthenware (n=21) and lead-glazed earthenwares (n=8), both characteristic of the eighteenth century, were recovered only below .4 m

depth. Cream-colored earthenware (n=26) and pearlware (n=41), both of which are late-eighteenth- and early-nineteenth-century wares, were recovered at depths of .2 m to 1.2 m. Only two sherds of whiteware were recovered, and these were from levels above .3 m. One undescribed aboriginal sherd and two sherds of unglazed coarse earthenware were also recovered. The presence of pearlware in most levels was interpreted as evidence that in situ pre-1780 deposits might be present only below 1.5 m, the approximate depth of water table and sterile clay. However, when a posthole digger was used to reach a depth of 2.5 m within the unit, no artifacts were recovered (Castille 1978:6-8 and Figure 12).

The third unit was also placed on the Esplanade Avenue side of the building, but this time at a distance of 1.2 m from the exterior wall. It measured 1.1 x 1.2 m and was excavated to a depth of 1.45 m. Tin-enamelled (n=6), unglazed coarse earthenware (n=1), lead-glazed (n=4), and pearlware (n=9) sherds were recovered. A clayey sand termed Zone 6 yielded small fragments of pearlware as well as gunflint fragments. This zone lay below a stratum of brick and mortar rubble. That portion of the stratigraphic sequence suggested a parade-ground succeeded by a building or demolition stage associated with a brick structure (Castille 1978:8-9).

Although no features associated with Fort St. Charles were encountered, further excavations were recommended because of pending terrain alterations on all sides of the U.S. Mint structure (Castille 1978:10). Further work was accomplished by monitoring of mechanical excavation of sewer and utility line trenches that were 1.0 to 2.2 m deep, by hand excavation of trenches to depths of .25 to .50 m in the basement of the structure, and by mechanical excavation of seventeen six-inch cores to a depth of 2.5 m (Gibbens 1978:6-7).

No evidence of Fort St. Charles was noted. Several brick footings were uncovered. These were interpreted as possible foundations for a coal shed or a covered walkway. Two square cypress timbers beneath the basement floor had probably served as supports for heavy equipment in the boiler room. Portions of a central set of water closets, 13.9 x 3.5 m and formerly located along a portion of the exterior wall, were excavated. These were floored with pine planks at 1.75 m below the top of the structure's foundation. Fill consisted of brick rubble, granite paving stones, and mortar. Few artifacts were present, indicating that the water

closets were cleaned out and backfilled with rubble during their 1908 demolition (Gibbens 1978:7-14).

A circular foundation of St. Joe Brick in the Flemish bond pattern represented a cistern base with a diameter of 2.5 m and a depth of .5 m. Interior fill yielded early-nineteenth-century transfer-printed pearlware sherds and modern 7-Up bottle fragments. Two circular steatite-lined basins with diameters of 3.05 m were noted. Fill was excavated from one of these, but it yielded only granite paving stones and brick. The spread-foot foundation of the original Mint smokestack was examined. Soft, bright red bricks were laid in the Common bond pattern, and the feature was 2.3 m square and .45 m thick. Artifacts included 209 glass sherds, of which 83 represented wine or liquor bottles. A total of 158 ceramic sherds were recovered. These included whiteware (n=79), pearlware (n=38), tin-enameled earthenware (n=17), creamware (n=7), and lead-glazed earthenware (n=7). Fifty-one of 54 recovered bones represented cow (Gibbens 1978:7-14).

Excavations indicated that numerous renovations of the building and grounds have resulted in disturbed stratigraphy and mixing of artifacts. Also, remains of Fort St. Charles probably were removed some time before or during construction of the U.S. Mint building (Gibbens 1978:7-14).

Gallier House Complex (16OR46)

The Gallier House site (1132 Royal Street) and associated warehouse complex (1118-1128 Royal Street) were part of the original Ursuline Convent grounds until the square on which they stand was sold by the Order in 1825. Buildings were constructed beginning in 1833, and the presently-standing Gallier House was built in 1857. Archeological investigations were conducted on the property in 1970 during an extensive renovation program (Hudson n.d. a:1-3).

The Gallier property was closed in by the house and garden walls in 1857. Artifacts were expected to derive primarily from occupations of pre-existing, nearby structures because in 1857 most of the grounds had been sealed under a flagstone walk or used as part of a grass plot with a fountain. Grounds associated with the Gallier House proper had been disturbed by construction of a swimming pool and subsequent deliberate infilling, by construction of a cistern base, and by various other construction episodes. The result was an absence of

observable stratigraphy necessitating interpretations based only on recovered artifacts (Hudson n.d. a:5-7).

Only one sherd of tin-enameled earthenware was recovered. All other ceramics were produced in the nineteenth or early twentieth centuries. These included pearlware, whiteware, and stoneware. The manufacture of at least some of these sherds probably pre-dated the 1857 construction, and all of them could have derived from earlier occupations of the square. Glass sherds were also recovered, and these included eleven identifiable seals. The servants' privy, constructed at the same time as the house, yielded only late nineteenth century artifacts. This indicates that the privy contents had been periodically removed during its period of use. The privy was a rectangular brick structure measuring 27 x 51 in, and was 62 in deep. The top and interior were covered with mortar. The interior contained two cypress floors, one at a depth of 42 in below the top course of bricks and the second at 52 in. Two hair tonic bottles, one hair dye bottle, and one perfume bottle were recovered from the privy fill, as well as wine bottles, table glass sherds, window glass, and one optical lens. An 1899 five-cent piece also derived from the privy, while three other coins recovered from the grounds were dated 1773, 1799, and 1833. The main house was served by an interior patent water closet which discharged into an underground sink five feet in diameter and seven feet deep. This feature had been destroyed by swimming pool construction (Hudson n.d. a:7-37).

One small area within the courtyard yielded 131 gunflints, suggesting a cache of unknown purpose and date. Only one black English flint was recovered. The others were honey-colored French flints. Toys recovered from the site included seven porcelain doll fragments, a toy porcelain animal fragment, a toy porcelain lid from a child's table service, and part of a lead horse. Most of these toys were manufactured during the late-nineteenth-century. Both clay and glass marbles were recovered. Faunal remains were primarily beef, followed in frequency by pork. Some chicken and smaller bird bones were found, as well as two fish vertebrae. Oyster shells were also present (Hudson n.d. a:38-46).

The warehouse adjacent to the Gallier House was built in 1832, and was the first building to stand on its site. Its use is unknown except for 29 years during which it was leased by mineral water companies and 34 years during which it was owned by furniture dealers.

It was used as a livery stable for less than two years (Hudson n.d. b:1-4).

Excavation revealed that the arcade brick piers rested on 2-inch thick cypress planks. Short planks had been laid across the base of a maker's trench, and longer planks rested on these and ran the length of that trench. The planks were at the level of the water table and provided the necessary base for the piers and the weight of the arches which the muck would otherwise have made unstable. Wall footings were stepped and also rested on cypress planks. One trash pit of undetermined size was noted (Hudson n.d. b:4-8, 13).

Several thousand buff-colored stoneware sherds were recovered, some of which bore the mark of M. Piris, a New Orleans manufacturer of soda water, who apparently used the warehouse in the 1840s. In the 1850s, P. Pons, another soda and mineral water dealer, used the warehouse, and some glass bottle fragments were embossed with his name. A series of such dealers used the facility until the 1870s. Other glass artifacts included wine bottle fragments, wine seals, and a cache of 56 light aqua ink bottles. Pontil scars on the latter indicated manufacture at some time between the 1820s and the 1880s. Pearlware and whiteware were the dominant ceramic types (Hudson n.d. b:13-30).

The Hermann-Grima House (16OR45)

The Hermann-Grima House at 320 St. Louis Street in the Vieux Carre is actually a structural complex that includes a two-story brick mansion, rear courtyard, three-story rear structure that served as a kitchen and work area and servants' quarters, and a smaller two-story brick structure also in the courtyard. The complex was built in 1831 for Samuel Hermann, a wealthy commission merchant. Felix Grima purchased it in 1844 after Hermann's bankruptcy, and the Grima family resided there until 1921. It has since been owned by the SPCA for three years, and by the Christian Women's Exchange (Shenkel et al. 1977:1-3).

Excavations by the University of New Orleans were designed to provide information on the kitchen and parts of the servants' quarters, on the well, on the smaller back-building, on the suspected privies, and on the cisterns. Twenty units of varying size were excavated (Shenkel et al. 1977:1-3).

Results provided important information concerning the function, construction sequence, and design of the two outbuildings. Excavation in the courtyard indicated that the present flagstone paving lies nine inches above an earlier herringbone brick patio. Between the two lies fill consisting of sand, lime, and concrete. Below the brick patio, features were uncovered that pre-date the 1831 structures. These features included a brick foundation and portions of two earlier courtyard pavements, one at 1.25 ft and the other at 1.75 ft below present ground surface. The series of pavements separated by fill indicates that residents of the Vieux Carre periodically elevated their occupation surfaces. Most of the eighteenth century artifacts recovered came from levels below the uppermost herringbone brick patio. One of the pre-1831 features was a wood-lined well, 6.5 ft in diameter with a depth of 5.25 ft below present surface. It was apparently filled with architectural rubble and debris and then covered by the herringbone patio at the time of construction of the presently standing structure (Shenkel et al. 1977:3-27).

A second well, this one associated with the 1831 structure, was also excavated. It was 13 ft deep and lined with bricks laid in a radial pattern. Diameter of the opening was slightly greater than three feet. Fill included late-nineteenth/early-twentieth-century clay marbles and coins, a brass shingle exhibiting Alfred Grima's name, and large amounts of slate and brick debris. The well was apparently filled in during the early twentieth century. Associated with the well was a rotary hand pump. No privies were located by these or subsequent excavations (Shenkel et al. 1977:27-29).

Ceramics, glass, and nails were the major artifact categories. Creamware accounted for over 58 percent of recovered ceramics, while pearlware constituted only about 20 percent. Other types included tin-enamelled earthenwares, jackfield wares, hard-paste porcelain, lead- and salt-glazed coarse earthenwares, refined earthenwares, redwares, black basalt, and stonewares. A total of 6,137 sherds were recovered. Of these, 91.7 percent were manufactured in Britain while 5.3 percent were of French origin. Mixing of ceramics and other artifacts of widely-varying dates in all units was interpreted as evidence of disturbance prior to excavation. Most nails were too badly corroded for identification. Diagnostic glass indicated manufacture dates from 1761 to the early 1800s (Prieto 1977:87-101). A re-analysis of ceramics from these excavations

indicates that, contrary to the original interpretation, disturbance was minimal (Yakubik 1990).

During 1982, Tulane University conducted additional excavations at the Hermann-Grima House to mitigate the impact of drainage improvements. Thirteen test units were excavated at various locations adjacent to the house and main outbuilding, and within the courtyard (Davis and Giardino 1983:2-4).

It was suggested that the uppermost herringbone courtyard, because of its relationship to the house and the configuration of brick-lined drains, may have predated the 1831 construction episodes. Wooden dividers consisting of upright stakes were uncovered in some brickless areas. The presence of a series of brick-lined floors beneath the herringbone was confirmed. One stratum yielded evidence of an episode of severe burning. Artifacts from the stratum were dated to 1780-1797, suggesting an association with the great fire of either 1788 or 1794. Mean ceramic dates from excavations south of the house ranged from 1831 at Stratum I to 1753 for the wood-lined well located beneath Stratum V. The ceramic and stratigraphic sequence suggested deposits were undisturbed beneath the uppermost herringbone. One unit contained part of a stepped-brick foundation for the house. As was true of the stepped-footings at the Gallier House, the footings at Hermann-Grima rested on cypress boards (Davis and Giardino 1983:19-49).

Of 3,435 artifacts, 56 percent were ceramics, 17 percent were glass, 17 percent were bone, and 10 percent were metal. Ceramic type percentages were almost identical to those reported for the University of New Orleans excavations, with creamware predominating (56 percent) and pearlware (20 percent) occurring with the next highest frequency. Most diagnostic bottle glass sherds were dated to the years between 1790 and 1810. The most commonly recovered faunal remains were cow, pig, and horse, with chicken and turkey bones common but less frequent. The lowest level of one unit yielded one shell-tempered aboriginal sherd and a blue glass trade bead (Davis and Giardino 1983:63-66).

In 1983, the University of New Orleans Archeological and Cultural Research Program undertook data recovery to mitigate the effects of improvements to the stable complex at 818 St. Louis Street. Six excavation units were placed within the stableyard. One of these revealed two brick features that were

interpreted as dating to the eighteenth century. A third brick pier was dated to the late-eighteenth/early nineteenth century. In addition, four units were placed within the stable annex, but no information on the function of this area was obtained. The final excavation unit was excavated within the residence at 820 St. Louis Street. It was placed below the floor of the first-floor "bathroom" of the house. There was no indication that an excavated privy was ever located in this area, but the unit provided data on the construction of the extant structure (Lamb and Beavers 1983).

Analysis of the cultural material included the presentation of "contextual ranges" and "median dates" for several tin-enamelled and coarse earthenware types for the purpose of calculating mean ceramic dates (Lamb and Beavers 1983:51-56). Unfortunately, there are serious problems with the assumptions on which these ranges and dates are based. First, the median dates are derived from "dates of possible importation to North America" on the basis of the occurrence of these types at only four sites outside of Louisiana (Lamb and Beavers 1983:52). In addition to this being a limited examination of the occurrence of these types (cf. Yakubik 1990:Appendix I), it has not been demonstrated that the mid-point of importation is necessarily the modal date of popularity. Conversely, the mid-point of manufacture does appear to reflect the peak of popularity of ceramic types utilized in South's (1972) original formula by the fact that "it works" (Deetz 1977:18). Finally, the authors' modified formula is applied to undated contexts, so there is no way to judge the validity of the results.

Far more successful is the typology and chronology for Louisiana bricks developed by Greene (1982) and utilized in this report (Greene 1983). Three types of hand-made bricks (ca. 1720 to ca. 1830) and five types of machine-made bricks (ca. 1820 to present) are presented. The type descriptions are clear, and chronology is based upon measurements on bricks from dated contexts. Similarly, the latter has been successfully tested on dated materials.

Convent of the Perpetual Adoration, Holy Cross Historic District

The only reported archeological investigations within the Holy Cross Historic District were conducted within the square bounded by Royal, Tupelo, Chartres,

and St. Maurice Streets. Presently standing on the square are the Convent of the Perpetual Adoration, completed in 1919, and a 1981 nursing home facility (Beavers and Lamb 1989:1-4).

The Convent of Perpetual Adoration is situated in an area that apparently was subdivided between 1834 and 1835. St. Maurice Parish was created in 1852, and the presently standing St. Maurice Church was erected in 1857. The Sanborn Insurance Map of 1896 indicates that by that date many lots in the area did not yet contain houses. A school once stood on part of the investigated square. Chain of title was not conducted to determine the date of construction and ownership of a dwelling standing on the property in 1896 immediately lakeward of the courtyard scheduled for impact (Beavers and Lamb 1989:20-35).

Eleven shovel tests were excavated within the courtyard, and a surface collection was made. Shovel tests yielded coal, cinders, gravel, animal bone, and whiteware sherds, one of which was dated to ca. 1950 by a maker's mark. Architectural debris was also recovered, and some evidence of fill on the site was noted. No artifact concentrations were observed (Beavers and Lamb 1989:1-4, 9, 13-16).

The Jazz Complex and Beauregard (Congo) Square

The project area was within Faubourg Tremé immediately adjacent to the Vieux Carré, and was bounded by North Rampart, St. Philip, North Villere, and Orleans Avenue and St. Peters Streets. That square houses the New Orleans Municipal Auditorium and the Louis Armstrong Park. Two specific sub-areas were the focus of archeological investigations. Area 2, Beauregard (Congo) Square was the suspected site of Fort St. Ferdinand associated with the French and Spanish defensive perimeters that circled the old city. Since the fort's removal after 1803, Area 2 has served as a public park and was the site of nineteenth century gatherings by urban slaves on Sunday afternoons. In addition to the two areas that were the focus of intensive field work, a trash pit, a well, and two privies in the 800 and 900 blocks of North Rampart Street were excavated. Units measured 5 x 5 ft and were excavated in .5 ft levels (Shenkel et al. n.d.:1-4).

A series of test pits and of backhoe trenches were excavated within old Congo Square. In one of these, at a depth of 3.1 ft and extending to a depth of 10 ft, was

a concentration of bricks associated with a row of vertical cypress planks which appeared to have been driven into place. A row of three upright posts or beams was also associated with the brick concentration. Artifacts in the trench were predominantly dated to the late-eighteenth- and early-nineteenth-centuries, with the exception of a lens that yielded large amounts of ironstone. The brick and board feature apparently represents the remains of a board-lined ditch and brick bridge known to have been part of Fort San Fernando. Those remains provided a basis for interpretations of construction sequences in the late-eighteenth-century. Strata in most other units and trenches in this area indicated that it was severely disturbed (Shenkel et al. n.d.:101-123).

The vicinity of the Jazz Complex was investigated in order to obtain data related to cultural activity during the several historic periods when the Faubourg Tremé served primarily as a residential community. The remains of a spring house measuring 10.2 x 8.0 ft were encountered at 0.2 ft below surface. Apparently the original flooring of the spring house consisted of a 0.5 ft thick layer of oyster shell. Although some creamware and pearlware were recovered from inside the structure, artifacts from the interior derived primarily from the late-nineteenth- or early-twentieth-century. The soft red bricks used in the foundation suggested construction prior to 1840. Excavations at the exterior of the structure yielded far more artifacts, including a much higher proportion of creamware and pearlware than was obtained from the interior fill. This supports the hypothesized construction date, and it indicates that the interior was periodically cleaned out, whereas the exterior was a locale for fairly concentrated refuse disposal (Shenkel et al. n.d.:123-143).

In an area near a firehouse, a wood-lined privy and part of a fence were uncovered. The fence line was interpreted as the eastern edge of a wood-lined, open trash pit, into which the later privy intruded. Over 10,000 artifacts, of which over 3500 were ceramic sherds, were recovered from units placed to investigate these features. The date range of recovered artifacts, including creamware, pearlware, coarse earthenwares, and ironstone suggested a date of ca. 1820 to 1870 for the features (Shenkel et al. n.d.:143-155).

At the St. Philip Street locale, two units contained the bottom segments of shallow privies, the tops of which had been removed by landscaping activity.

Both were apparently associated with a single residence. Artifacts were predominantly from the early-nineteenth-century, suggesting that this might have represented one of the earliest residential sites in the faubourg. A fire well, consisting of a hollow circular column of bricks with a diameter of 5.2 ft and a depth of 10.0 ft, was excavated at a locale near 827 N. Rampart St. Although well water was not drinkable, an eighteenth century ordinance required the presence of a well in case of fire. Creamware (17 percent), pearlware (44 percent), and ironstone (18 percent) were the predominant wares suggesting that the well had been infilled during the early- to middle-nineteenth-century (Shenkel et al. n.d.:144-161).

Features and artifacts representing late-eighteenth to late-nineteenth-century occupations were present at the various sites. The number of artifacts, and the fact that many derived from described and dated features, make this an important comparative collection. However, the reported ceramic analysis is somewhat idiosyncratic so that before comparisons with other sites can be made, re-analysis should be undertaken.

Algiers Point

Archeological data recovery of several city blocks scheduled for impact by a levee setback was conducted at Algiers Point, a short distance upriver and across from the present project corridor. Prior to field work, an archival overview (Fritz and Reeves 1983) was prepared (Goodwin et al. 1984:12). Field methods applied at Algiers Point consisted primarily of excavation of backhoe trenches of variable length and depth supplemented by hand excavations of features. Excavations were located within squares which, on the basis of archival research, were considered to be high probability locations for intact historic period archeological deposits (Goodwin et al. 1984:137-139).

Fifteen features and three refuse deposits were uncovered in Square 21. One of these was a ferrous zone associated with Johnson Iron Works, the location of which is shown on a 1909 Sanborn map. Wooden planking above an L-shaped brick foundation was also excavated. Excavations within Square 21 also yielded cultural material associated with residential occupations (Goodwin et al. 1984:137-139).

Features within Square 13 were primarily brick walls and smaller brick foundations. Some of these were

associated with a slate-roofed residence which was standing during the 1880s. Others were associated with Johnson Iron Works and included foundations to support machinery. Two refuse lenses associated with antebellum and postbellum residential activity were also uncovered. Square 10 contained the remains of a blacksmith concern as well as three tenant residences shown on the 1903 Sanborn map (Goodwin et al. 1984:139-140).

Analysis of cultural material included calculation of mean ceramic dates and bracketed glass dates for all excavated proveniences. All of the obtained dates were within the nineteenth century, and were primarily post-1850. Earlier dates were generally associated with smaller sample sizes, many of which were so small that they may be unreliable (Goodwin et al. 1984:169-172).

Unfortunately, deficiencies in the documentary and archival records limited the utility of analysis of artifacts aimed at differentiating status of the various occupants. Often, artifacts were recovered that predated periods for which archival information had been obtained. This was the case for cultural material associated with residential occupations within Square 21 (above). However, sufficient archival information was obtained for interpretations and comparisons of residential debris excavated from Square 13. Material there could be assigned to a church and clerical residence (1849-1872) and a subsequent mixed residential-commercial occupation by a "middle class" mortician and furniture-maker. Also, some material was obtained from Square 13 that could be assigned to a "working-class" occupation (Goodwin et al. 1984:179).

South's (1977) functional classes of artifacts were used for data analysis with two major modifications. First, because of low frequencies of occurrence, the categories of clothing, tobacco, and toys were included in the category for personal items. Second, South's kitchen category was modified in that glass and ceramics were considered separately.

When artifacts from privy fill were compared for the "middle class" and "working-class" occupations, significant differences were noted. The "middle-class" privy yielded more glass, architectural material, and personal artifacts, but it contained fewer ceramics. The greater than expected frequency of architectural material was attributed to demolition of the church that formerly occupied the lot. However, the high frequency of glass and personal artifacts was interpreted as a

reflection of a higher status occupation. Miller's (1980) price ranking of ceramics was also used to compare the "middle class" and "working class" occupations. Following Miller, porcelain was excluded from the analysis. Because of low frequencies of occurrence, Miller's second and third levels were combined. The comparison did show a significant difference between the two ceramic assemblages. One additional comparison, this time between the "working-class" resident and a nearby "tenant" produced similar results. Statistical testing did not support the hypothesis that higher status occupations yield a higher frequency of personal artifacts than do lower status occupations. Similarly, a comparison to detect the presence of relict ceramics in assemblages associated with lower status occupations yielded negative results (Goodwin et al. 1984:179-195).

Excavations at 16OR69

It is believed that this site, bounded by Jackson Avenue, St. Thomas, Josephine, and Rousseau Streets was initially the location of a sugar house. That structure was converted for use as an orphanage dormitory. Subsequently, residential structures and then a school were present. Backhoe trenches were used to locate features which were then excavated by hand. Thirty-five features were uncovered, of which the majority were brick footings and foundations. Excavated features also included two cistern foundations and three privies (Goodwin and Yakubik 1982:1-3).

The site was part of a plantation above New Orleans until the 1824 purchase of a lot by the Society for the Relief of Destitute Orphan Boys. The organization repaired an "old brick edifice formerly a sugar house..." on the property in order to house orphan boys. The asylum was abandoned in 1861, and the property was subdivided and sold at auction in 1866. Subsequently, shotgun residences and a school for African-Americans stood on the various lots (Goodwin and Yakubik 1982:4-19).

A series of brick footings were interpreted on the basis of map evidence as the remains of the sugar house/orphanage. Most other brick features were continuous brick foundations associated with later structures. One of the trashpits contained a large concentration of kitchenware and subsistence refuse, and was located near an addition to the orphanage dormitory that may have been a kitchen wing. One of the cistern

bases probably was constructed prior to 1860, while the other was slightly later. The excavated privies were dated from 1885 to 1895 (Goodwin and Yakubik 1982:20-30, 97-147).

Artifacts included kitchenware, architectural items, toys, tools, buttons, and a variety of personal possessions. The majority were recovered from the trash pit and from privies, with very few occurring in the immediate vicinity of living areas. This pattern of artifact location is different from models developed for eighteenth century British sites in the East. It reflects efforts by nineteenth century urban residents to maintain a relatively clean area around their houses and to dispose of refuse in discrete features or to remove it to some other locale (Goodwin and Yakubik 1982:82).

Ceramic dating indicated that for the late-nineteenth-century, Mean Ceramic Dating as proposed by South (1977) should be used with caution because no date so calculated can post-date the latest median date for the types occurring in the sample. Glass artifacts, especially datable manufacture techniques, were used to provide a more realistic chronology for the site and its features (Goodwin et al. 1982:83-96).

A comparison of the dates for glass and ceramic artifacts associated with the orphanage (1825 to 1861) indicated that relict ceramic use was occurring in that institution. Mean Ceramic Dates from specific features were considerably earlier than bracketed glass dates for the same features. This was not true for later residential occupations on the site. Ceramics were also divided into holloware, flatware, and miscellaneous categories. The analysis indicated that occupants of the orphanage used relatively greater proportions of holloware than did the later residents of shotgun houses. However, frequencies of holloware were higher than those recorded by Otto's (1977) studies of an "upperclass" planter and a "lower middle-class" overseer, indicating that both occupants of the orphanage and the subsequent residents were all of "lower class status." Burned bone was rare at the site, suggesting that roasting meat was an uncommon practice. This, and the high frequency of hollowares is evidence for a diet high in soups and stews. Finally, use of Miller's (1980) price ranking analysis, discussed at greater length below, indicated that a greater proportion of expensive ceramic types were used by the late-nineteenth-century residents than was true for the

occupants of the orphanage (Goodwin and Yakubik 1982:180-187).

Neither ethnic identities nor occupational status of the post-orphanage residents of 16OR69 were obtained at the time of excavations and the subsequent report. However, these data could be easily obtained should the curated collection be relevant for comparisons with other New Orleans sites.

Archeological Monitoring of the Floodwall Trenches

Since 1976, the New Orleans District Corps of Engineers has engaged the services of a number of archeologists to monitor inspection trenches excavated in the course of construction of new floodwalls along the Mississippi River. Also, Reeves and Reeves (1983) wrote a history of land use of the project corridor, and Goodwin et al. (1985) used that study to formulate a research design for such monitoring. The research design identified a series of themes related to the development of the port and presented a categorization of structures and areas according to five major classes (Goodwin et al. 1985:67-75).

One site reported in the course of floodwall monitoring and which may be important to the present study is 16OR107. It is located on the west side of the Inner Harbor Navigation Canal near the Mississippi River. Although early-nineteenth-century ceramics were recovered here, the site was originally interpreted as a late-nineteenth century lumber yard (Goodwin et al. 1986:90-91). That interpretation was apparently based on the earlier work of Reeves and Reeves (1983). However, the ceramics recovered as well as the nature of the architectural debris reported, are consistent with remains that might be associated with the location of the Second Ursuline Convent. The history of that establishment is presented in Chapter 6 of this report. The location of 16OR107 is consistent with the predicted location for the main buildings of the convent based on CAD overlays discussed in Chapter 12 of this report.

Jones and Franks (1992) review in some detail the various other sites reported in the course of floodwall monitoring. Most of the artifacts and features consisted of construction materials. 16OR107 is one of only two sites where more than a few artifacts predate the Civil War. However, one significant site (16OR116) represents the Robin Street Nuisance Wharf. From this wharf, garbage was loaded onto barges and carried out

into the river for dumping between ca. 1877 and ca. 1893. Although only limited numbers of ceramic sherds and faunal remains could be collected due to unstable trenches, the artifacts indicate that further excavations at the site could provide information on material culture in late-nineteenth century New Orleans as well as on refuse disposal practices (Harris et al. 1988: 22-23, 36-37, 75-79, 86-87).

Lots at Esplanade Avenue and Rampart Street (16OR63)

Archeological test excavations were conducted within an area just outside the Vieux Carre. Located at the corner of Esplanade Avenue and North Rampart Street, part of the property was located within the Faubourg Marigny Historic District and the remainder was within the then-proposed Esplanade Avenue Historic District. A French bastion dated to the colonial period, and Fort. St. Jean associated with the defensive walls built in the Spanish period, were thought to have been located in the vicinity of the project. By the 1820s, the fort and associated wall had been removed, and subdivision for residential use had begun. The architect Felix Pinson built two houses on the lots, and he sold those structures by 1836. A female Free Person of Color was living on one lot by 1813. Through the 1800s, structures passed through a series of owners, and beginning in 1871, the Ursuline Nuns, followed by the Brothers of the Sacred Heart, established schools there. One other portion of the property had a different history. It became the site of one of the costliest mansions in New Orleans in 1856. This latter area (Unit 2) was ultimately determined ineligible for the National Register of Historic Places (Castille et al. 1979:2/11, 4/4-4/11).

The Pinson/Ursuline areas, deemed Unit 1, were found eligible for inclusion on the National Register after excavation of eight 1 x 1 m test pits yielded features and large numbers of artifacts from the early- and late-nineteenth-century occupations. Data recovery was recommended and later undertaken on this portion of the property (Castille et al. 1979:5/12-7/1).

Several explicit research objectives were developed to guide further archeological investigations. One goal was further development of a model for urban residential compounds typical of the slave-holding South. Such compounds commonly consist of a main residence, a yard in the rear that often included servants' quarters, a kitchen, store rooms, a stable, and other outbuildings

located either to the side or to the rear of the main house. The Pinson two-story townhouse represented such a compound. A nearby property, occupied by Free Persons of Color from the 1850s to ca. 1870 and then occupied by whites of modest means, was expected to provide a contrast to the Pinson compound (Castille et al. 1982:1/3-1/4).

The second major research objective was an examination of manifestations of social and status differences in the archeological record. It was anticipated that status differences would be reflected in architectural remains, material possessions including ceramics, and dietary remains. The third objective was to obtain archeological data pertaining to material and spatial aspects of urban slavery. Finally, research was designed to depict involvement of residents in local, regional, national, and international economic spheres (Castille et al. 1982:1/6-1/7).

On the Pinson lot, 71 m², or approximately one percent of the total surface area, were excavated by hand and 15 m² were opened by backhoe. On the other lot 54 m² (1.4 percent of the total area) were excavated by hand and 3 m² by backhoe. Over 50,000 artifacts were recovered, of which over 25,000 derived from features. The latter group was analyzed. The 23 recovered features consisted of six brick foundations, three trash pits or piles, three demolition or pipe excavation disturbances, two artifact concentrations, two brick-lined wells, three brick walkway or patio remnants, three brick-lined pits, and two pits or depressions (Castille et al. 1982:1/8,4/5-4/6).

For analysis of artifacts, South's (1977) nine functional groups were used: (1) kitchen; (2) bone; (3) architecture; (4) furniture; (5) arms; (6) clothing; (7) personal; (8) tobacco; and (9) activities. Two additional functional groups were devised to accommodate artifacts not considered by South: (10) miscellaneous; and (11) structural debris for bricks, slate, and other rubble types not included in architecture by South. Finally, the kitchen group as defined by South was modified to accommodate late-nineteenth- and early-twentieth-century material such as tin cans (Castille et al. 1982:5/1-5/8).

Miller's (1980) pricing study of late-eighteenth- to middle-nineteenth-century earthenware ceramics was used to examine status differences between occupations. Miller classified ceramics into four groups to which he

assigned numerical status indices. These are, in increasing status order: (1) undecorated; (2) edge, sponge, banded, mocha, and finger trailed slip decorations; (3) hand-painted; and (4) transfer-printed and ironstone. Some additions were made to Miller's four groups in order to accommodate common late-nineteenth-century ceramic types. "Ironstone" was defined as a highly vitrified, "opaque porcelain." Also, molded or embossed ceramics were ranked with hand-painted ceramics, and yellowware was added to the edge/banded/mocha category. Finally, lead-glazed utilitarian earthenwares and stoneware were placed with undecorated ceramics in the lowest status (Castille et al. 1982:5/33-5/34).

Data to address the first research objective of the project derived from comparisons of the excavated properties with other nineteenth century residential compounds. The result was refinement of a model depicting three variations of "middle class" residential units which apparently, at the time of construction, corresponded to differences in socio-economic status. The lowest status compound of the three "middle class" units consists of a main residence, a detached kitchen, a courtyard, privy, cistern, and fire well. The residential structure is often a one-story wooden Creole cottage. Sometimes these were "doubles" shared by two poorer families. Middle status units are characterized by the additional presence of servants' quarters in the same structure as the kitchen. Also, the residence is often larger, sometimes a 1-1/2 story Creole cottage. Such a middle status compound was commonly surrounded by a wooden fence. The highest status "middle class" compound is characterized by an additional building which may have served as a stable/carriage house. Most structures are made of brick. Both the main house and the kitchen/servants' quarters are two stories. A carriage-way may lead into the courtyard. A high brick wall surrounds the compound, and a formal garden may be present in or near the courtyard (Castille et al. 1982:6/1-6/3).

The second research objective of the project, examination of social and status differences, was not met due to site disturbance and due to temporal differences between features on the two lots in which excavations were conducted. One other problem with such an objective may be the admixture of artifacts from the main residence and the servants' quarters of a single high status, walled compound. This problem also makes data collection to address the third objective,

depicting spatial and material aspects of urban slavery, particularly difficult. The fourth objective, documenting economic networks, was somewhat successful because of available information on ceramic types and makers' marks and on the French origins of most of the excavated wine bottles (Castille et al. 1982:6/3).

Use of formal/functional groups for comparing artifacts was a successful research strategy for the site. A higher percentage of kitchen-related artifacts was recovered than is true of British patterns defined on the basis of sites on the East Coast. However, the percentages at Esplanade Avenue did approach those termed the "Piedmont Survey Pattern," possibly reflecting low status occupations of the late-nineteenth- and early-twentieth-century, or reflecting a change in artifact patterning characteristic of and ongoing during the nineteenth century as a whole (Castille et al. 1982:6/3-6/5). Field investigations and artifact analyses reported for this project were exemplary, and represent an invaluable data base for comparisons with other urban sites both in New Orleans and in other cities.

The Greater New Orleans Bridge No. 2 Right of Way

The most extensive and best-reported archeological investigations in Urban New Orleans to date were undertaken in the Lower Garden District, within the right-of-way of the Greater New Orleans Bridge No. 2. The project area lay along an axis stretching from the foot of Thalia Street at the river to the bed of the former New Basin Canal near Claiborne Avenue, encompassing at least 56 squares. Pursuant to the Scope of Services, no intensive survey was undertaken. Rather, 24 properties which had been found to have architectural significance were defined as the focus of archeological investigations. The properties included a cotton press, a cotton mill, residences, warehouses, stores, a church, and miscellaneous other structures. Actual archeological testing was undertaken on 14 of the 56 squares, each of which contained an average of about 12 properties. Thus, only a few properties on each square could be investigated. Ultimately only about one-half of the architecturally significant properties were investigated, but excavations were conducted at replacement sites defined on the basis of testing. Both backhoes and hand excavation units were used in the course of these investigations. Field work lasted about four months. A total of 9200 person hours were expended in the field and 16,000 additional hours were expended

during artifact analyses and report preparation (Castille et al. 1986:1/1-1/6).

Notarial records, census records, and city directories were used to identify mid-nineteenth-century residents of targeted properties. The project research design outlined several objectives. The first was to examine the structure and variability of the urban residential unit based on the model previously proposed by Castille et al. (1982 and above). The second objective was an examination of social, ethnic, economic, and status variability. One aspect of this was to obtain comparative data from nineteenth century occupations by German and Irish immigrants, as well as from non-immigrant "middle and upper class" residents. The third research objective was to examine the commercial and industrial setting of the project area. One aspect of this objective was an examination of nineteenth century use of the accreting batture located here (Castille et al. 1986:1/9-2/7).

For artifact analyses, South's (1977) functional classification was abandoned because his typology appears to include a mixture of both functional and descriptive criteria and because some of his artifact classes represent several unrelated activities. A new functional classification was, therefore, devised in an attempt to compare artifacts on the basis of presumed function. Where previously established descriptive criteria provide relevant data, such as chronological information derived from glass and ceramics, these were also used for analysis. The desired result was added flexibility during analysis so that an appropriate classificatory system could be used to address specific research problems (Castille et al. 1986:2/6-2/7).

Table 2-1 in Castille et al. (1986:2/8-2/10) should be consulted for detailed information regarding functional categories used in this study. These are only briefly outlined in the present discussion. The Domestic Group includes artifacts that would have been kept in the house and used for subsistence and comfort. The two major components are a kitchen class and a household furnishing class. The Personal Group includes portable items that would have been carried or worn by an individual. The Health and Hygiene group includes two major classes, artifacts related to medicine and artifacts related to sanitation. The Architecture Group included three artifact classes: construction, hardware, and utilities. The Economic Activities Group includes four classes: industrial, handcraft, commercial

services, and transportation. The Services Group encompasses military artifacts and artifacts related to public services. The Ritual Group includes religious and fraternal artifacts. Finally, an Unclassified Group includes miscellaneous fragments of metal, glass, ceramics, and other artifacts the function of which could not be determined (Castille et al. 1986:2/7-2/12).

Ceramics, glass, buttons, and coins were used to date all excavated features. Status was examined through comparisons of the relative percentages of ceramic types, faunal remains, alcoholic beverage containers, and tobacco pipes. Miller's (1980) pricing categories, as modified for the Esplanade Avenue excavations (Castille et al. 1982 and above) were an important component of investigations related to status. Vessel forms were also used. Occurrences of wine seals and of tobacco pipe fragments were used to address status, and it was believed that the latter artifacts might reflect ethnicity as well (Castille et al. 1986:2/14-2/17).

The project area had been owned first by Bienville, then by the Jesuits, and after 1763 by members of a few French Creole families who were representatives of New Orleans' ruling elite. Subdivision of some areas for residential and commercial use began as early as 1810. By the mid-nineteenth-century, much of the area was populated by Irish and German immigrants. Use of the censuses of 1850 and 1860 indicated that most residents of the area worked at jobs near their houses. Coffee houses, bars, and grocery stores were common in the neighborhood. A sample of 1,120 residents included 292 working people with 54 different occupations. The largest category was that of laborer, and included thirty percent of the sampled workers. The other common occupations were clerk, merchant, carpenter, drayman, and steamboatman. Industrial/commercial facilities in the vicinity included a relatively large number of cotton presses, a sugar refinery, a foundry, and numerous warehouses (Castille et al. 1986:4/1-4/31).

Field work resulted in excavation of 59 backhoe trenches and 110 hand excavation units, together representing 1000 m³. Features included 23 privy pits, two wells, nine cistern foundations, 74 wall foundations, and 68 pavements, as well as post molds, trash deposits, and artifact lenses. Artifacts were associated with a wagon yard, a tin shop, an ice house, a brick kiln, stores, residential complexes, and other components. It was estimated that two tons of

artifacts, or over 200,000, were recovered. In general, the smallest cultural unit was the lot. Most lots, especially those used for residential purposes, maintained the same configuration through the nineteenth and twentieth centuries. Research objectives were refined in the course of excavations, and one square (Square 46) was selected for intensive comparison of remains of Irish and German immigrant occupations and of industrial development. Previous experience in the project corridor indicated that careful exploratory trenching with a backhoe yielded more features. This was confirmed by the additional excavations within Square 46 (Castille et al. 1986:5/3-5/6). A detailed report of excavations by square and by lot, and of artifact analyses for each excavation unit and/or feature, were included in the report (Castille et al. 1986:6/1-6/518) which is, and may remain, the single most important source for information concerning nineteenth century archeological deposits in New Orleans.

The largest number of artifacts derived from privy fill. The densest concentrations of artifacts within privies generally occurred either in a thin zone at the top or at the base. This suggested that artifact deposits in privies usually were the result of a single, temporally restricted event rather than a slow accumulation over the use life of the pit. It is possible that this pattern of deposition is related to transitional periods in site occupancy, such as when a family moved in or out of the associated house, or when a dependency is cleaned out. Also, the contents of privies in New Orleans were periodically removed for sanitation and hygiene reasons (Castille et al. 1986:7/1-7/4).

In an effort to assess the utility of the Functional Group classification system proposed and used, 24 major proveniences representing 19 features were examined. These proveniences yielded the largest concentrations of in situ artifacts, and represented properties for which the occupants could be identified. Site function for these properties was classified as either residential, craft (a residence with an associated cottage industry), or store (combination residence and retail outlet in the same building). Functional groups of artifacts were compared. For the 24 proveniences as a whole, artifact functional group frequencies in descending order were Architecture Group (35 percent), Domestic Group (31 percent), and Personal Group (30 percent). The Health and Hygiene Group was

considerably less important, and the other newly-defined categories included less than one percent each. Similarities in size of the three largest groups indicated the utility of the classification scheme, because use of South's (1977) often results in assignment of 75% or more of all recovered artifacts to a single functional group. Group frequencies for the three types of sites were similar, except that relatively less architectural material and relatively more Personal Group material was associated with stores (Castille et al. 1986:7/4-7/9).

Census records, map data, property titles, and city directories provided a social history of some of the sites which was used to assess status and ethnicity of the occupants. Each of the twenty locales compared were ranked along a continuum from low to middle or high status. The artifacts associated with those locales were then compared. Fifteen of the twenty proveniences were considered middle status based on the archival record. Ceramics from these included a greater percentage of high status wares and a lower percentage of low status wares than did the five proveniences which the archival record indicated to represent a low status occupation (Castille et al. 1986:7/9-7/13).

An attempt was also made to determine whether the declining socio-economic status of residents of the project corridor during the late-nineteenth- and early-twentieth centuries was reflected in the archeological record. It was not, and this was considered to result from the fact that the modification of Miller's (1980) pricing scheme placed porcelain among high status wares despite the fact that cheap porcelain began to be produced during the period in question (Castille et al. 1986:7/12-7/13).

Archival research indicated that ethnic groups in the project corridor could be ranked, from highest status to lowest, as Germans, Italians, and Irish. A ceramic status comparison was undertaken to determine whether this was reflected in the archeological record. It was not, as Italian occupations yielded the highest percentage of high status ceramics. This was again considered a possible artifact of the classificatory scheme. The Italian occupations were relatively late so that a higher proportion of relatively cheap porcelain was recovered, while the modifications to Miller's scheme placed all porcelain in the high status category. Also, Irish occupations yielded a relatively higher percentage of high status ceramics than did German,

which was again the reverse of the prediction made based on the archival record. Possible explanations are relatively similar status between the specific households compared or differential emphasis on stylistic display related to status by the different ethnic groups. Interestingly, the frequency of ceramics in German privies was lower than in privies associated with the other groups, and yard middens on German sites yielded relatively fewer artifacts, suggesting that they disposed of fewer items in the vicinity of their house (Castille et al. 1986:7/13-7/17).

Remains of wine and other alcoholic beverage bottles were also compared to determine whether higher status occupations were associated with relatively more wine consumption and lower status occupations with relatively more consumption of other beverages. No difference was indicated by the comparison. However, an analysis of wine seals did yield positive results. Such seals usually appear only on more expensive wines. Within the project corridor, they were recovered only from features associated with middle status occupations. Ethnicity was reflected by frequency of tobacco pipe fragments, which was greater for features associated with Irish occupations than for German occupations. There was no association between socio-economic status and pipe-smoking, but perhaps unexpectedly, the frequency of elaborately decorated pipe bowl fragments was higher on low status sites. Generally, however, all pipes were relatively inexpensive. Other artifact comparisons to examine ethnic differences were generally unsuccessful (Castille et al. 1986:7/17-7/23).

Discussion of Previous Investigations

Only one previously recorded site in New Orleans is directly related to the project discussed in this report. That site is 16OR107 (above), which was originally interpreted as the remains of a late-nineteenth-century lumber yard. However, its location and the artifacts recovered suggest that it may actually represent a portion of the main complex of buildings associated with the second Ursuline Convent. Also, as noted in one of the preceding sections, the only professional archeological survey within the Holy Cross District focused on only a portion of a city square. No sites were recorded.

Only a very few excavations conducted by professional archeologists have yielded evidence of colonial period occupations in New Orleans. To date,

the most important of these probably occurred at the Hermann-Grima House. Also important were Shenkel et al.'s (n.d.) findings in the vicinity of Beauregard Square. These included features associated with Fort San Fernando which was built during the eighteenth century. Recent excavations at the Cabildo and at the site of an early-eighteenth-century barracks promise to provide additional information about architecture and lifeways during the period of French rule (Yakubik, in prep). Identification of and excavation at sites with the potential to yield data about eighteenth-century New Orleans are important goals for archeologists in the region.

As was stated in one of the preceding sections, the most extensive and best-reported archeological investigations to date were conducted within the Greater New Orleans Bridge No. 2 Right of Way (Castille et al. 1986). The archival approach made use of notarial records, census records, city directories, and historic maps, and was in many respects comparable to that used in the present study and by Franks et al. (1991) for the Holy Cross area. Further use should be made of this approach if data recovery becomes necessary (Chapter 12). The "Bridge" study is also important in relation to the Holy Cross study area because most of the residential features and artifacts uncovered were associated with mid- to late-nineteenth-century occupations by a variety of immigrants. Most of the households investigated were middle or lower income, and were therefore comparable to households in the present study area (Chapter 7). In addition to the report of Castille et al. (1986), other reports that should be consulted in the course of data recovery within the present project area include Goodwin et al.'s (1984) study of Algiers Point, Goodwin and Yakubik's (1982) study at 16OR69, and Castille et al.'s (1982) study at 16OR63. All of these present useful discussions of artifacts associated with residential occupations in New Orleans, and would represent an important source of comparative data.

CHAPTER 6

CHAIN OF TITLE FOR THE PROJECT AREA

Chapter 7 in Franks et al. (1991:105-113) summarized chain of title of an area that lies within the present-day Industrial Canal and for an area below that canal, between Sister and Deslonde Streets, some of which may be impacted by replacement of the present lock system at the Inner Harbor Navigation Channel. Thus, the chapter summarized chain of title for the area that became the location of the second Ursuline Convent in New Orleans as well as the present study area. The period for which data were obtained was from ca. 1723 through 1869. Ms. Betsy Swanson conducted much of the archival research upon which that chapter was based.

The main focus of the present study was archeological testing in the area between Sister and Deslonde Streets. However, historic maps that included the Ursuline Convent area were digitized by the Louisiana State University CADGIS Laboratory. The purpose of including the Ursuline Convent in this map research was to obtain data concerning the suspected location of the main complex of buildings associated with the convent (Franks et al. 1991:194). For this reason, chain of title for the area that became the location of the second Ursuline Convent is included in this report. Also, the present study area was at various times a part of larger holdings that included other areas both upriver and downriver. Inclusion of those areas in the discussion of chain of title provides a more coherent background for understanding land use and development within the study area proper.

Land transactions outlined in this chapter were complex. Figure 3 is an excerpt from the USGS quad, and it is marked to show the general area under discussion as well as the boundaries of three specific parcels, labelled and discussed as "A," "B," and "C." Figure 4 presents a summary of the land transactions. Frequent reference to the two figures should facilitate an understanding of this discussion.

The 1723 Carte Particulere shows a series of ca. 1720 concessions below New Orleans made by the Company of the Indies. Beginning at the lower edge of the Vieux Carre, the first of these was La Brasserie (or the Brewery). It consisted of five arpents front and was owned by Pierre Dreux. Next was a three arpent tract granted to J.B. Chavannes and later bought by Dreux for incorporation into La Brasserie. The next tract

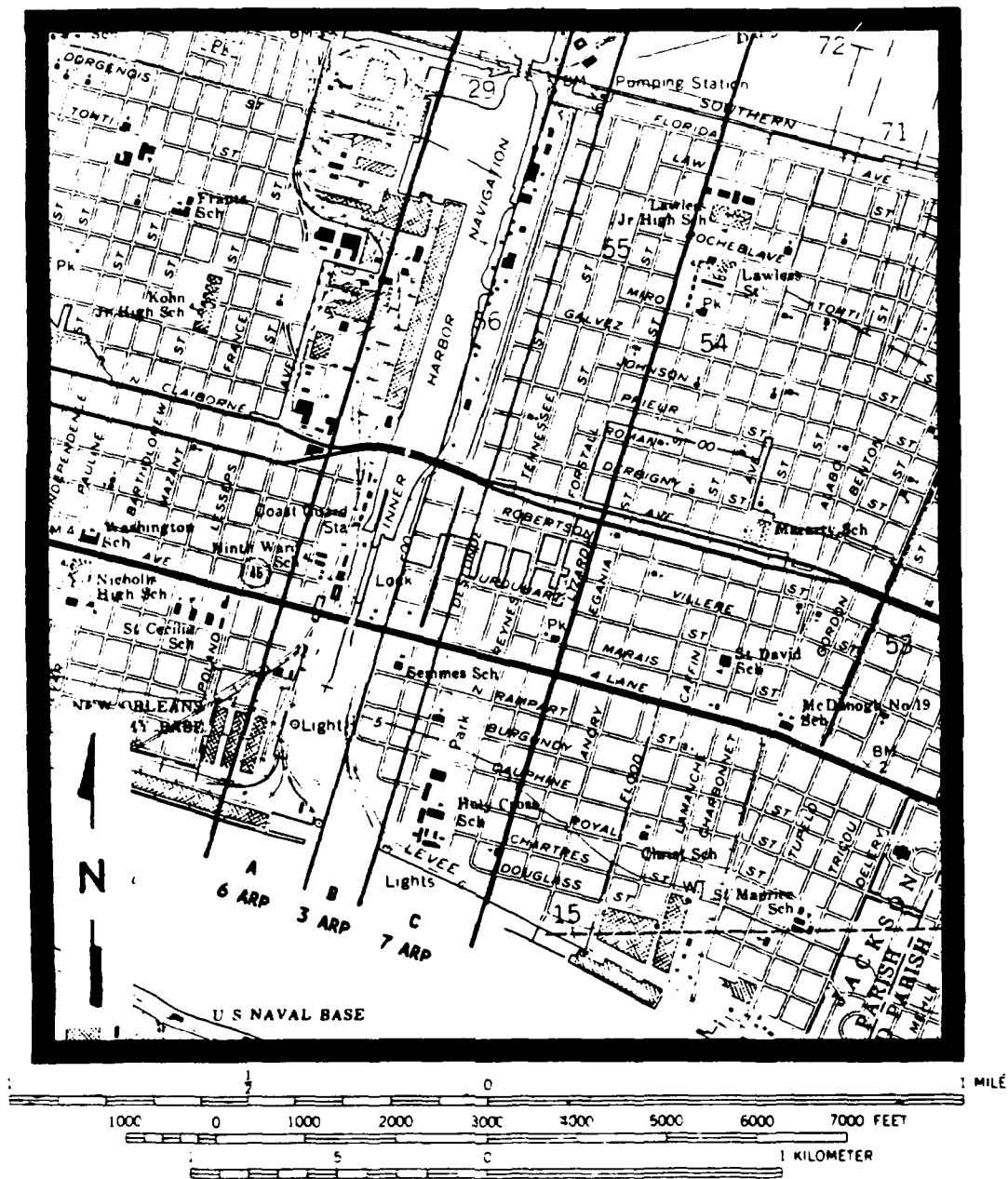


Figure 3. Excerpt from the USGS quadrangle, New Orleans East, delineating parcels for which chain of title is presented.

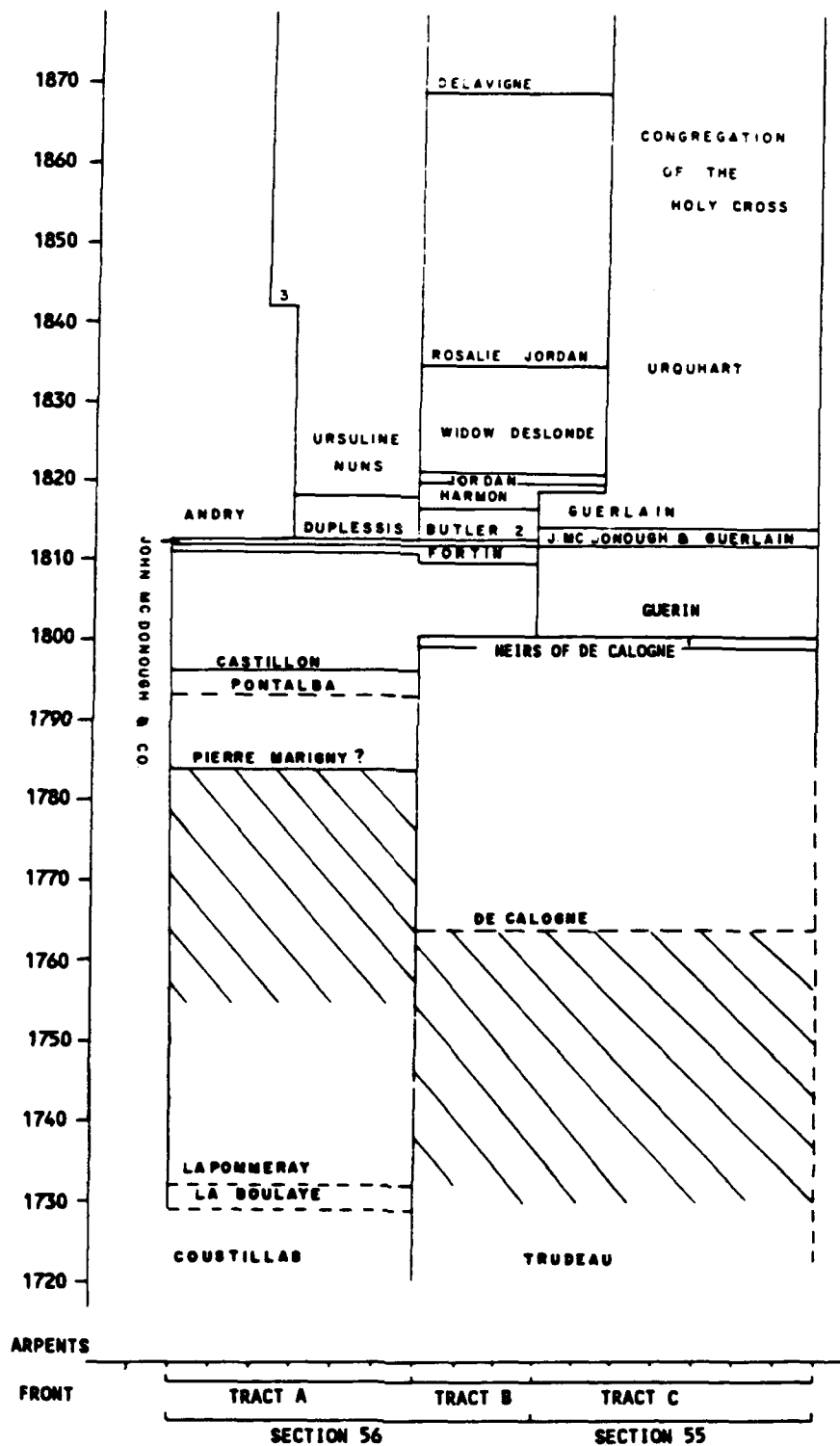


Figure 4. Schematic representation of chain of title for the study area.

KEY TO FIGURE 4

1. The interests of the numerous Decalogne heirs were consolidated by Juan Bautista Dolhonde and Luis Antonio Decalogne, who sold the property to Juan Bautista Lille Sarpy (P. Pedesclaux, 2 August and 11 November, 1800, NONA). Sarpy sold the plantation to Guerin two days after he acquired it (P. Pedesclaux, 13 November 1800, NONA).

2. Richard Butler purchased the property from Resin Davis Shepherd (M. de Armas, 26 Feb 1812, NONA). Shepherd had purchased the property from John McDonogh and Co. the previous day (M. de Armas, 25 February 1812, NONA).

3. Heirs of Manuel Andry to the Ursuline Nuns (L.T. Caire, 8 April 1842, NONA).

downriver consisted of seventeen arpents front owned by Jonathan Darby. Below that was fourteen arpents held by Coustillas, an officer of the Company. Although present-day locations of some of these early concession boundaries cannot be precisely determined, it is probable that the lowest six arpents of Coustillas' tract later became the site of the second Ursuline Convent and then of the Industrial Canal (Wilson 1974:20-21). Below the Coustillas' concession was that of Trudeau. The present study area as well as lands later purchased by the Congregation of the Holy Cross probably represent the uppermost portion of Trudeau's holding.

Land transactions were frequent during this early period of French colonization, and at present only partly documented. However, by 1731, census records indicate that there was an intervening property between that of Coustillas and Trudeau. This tract was owned by LaPommeray, who obtained it through marriage to the Widow Laboulay (Conrad 1970:49). LaPommeray held this land until at least 1753.

By 1764, Decalogne appears to have owned the former Trudeau concession because in that year he was granted a second depth (for a total of eighty arpents) from the river (Gales and Seaton 1834:336). Ownership may have been formalized by the Spanish government in 1785 when a ten by eighty arpent concession was granted to Luis Antonio de Cologne.

In 1784, Pierre Marigny may have obtained the former Coustillas' holdings (Wilson 1974:21). If so, he had sold at least the lowermost six arpents to Joseph Xavier de Pontalba by 1794. In that year, Pontalba requested that Governor Carondelet grant him a second depth for a habitation with six-arpents front situated one-half league below the city and on the same side. A plat associated with this transaction was executed by Carlos Trudeau (de Armas, October 6, 1812, NONA).

Pontalba sold a six by forty arpent tract to Juan Bautista Victor Felix Castillon in 1795. The property was bounded above by lands owned by Lorenzo Wiltz and below by the tract owned by the Decalogne family since 1764. It is in this period that maps and notarial records make placement of the tracts under discussion more certain. The downriver portion of Pontalba's habitation, which he was selling to Castillon, would a few years later become the site of the Ursuline Convent and later of the Industrial Canal.

The habitation purchased by Castillon in 1795 included a principal house, slave quarters, and other buildings. A distillery for production of hard liquor was also located thereon. With the property went tools and utensils, two yokes of oxen, forty head of cows (both large and small), two mules, and eleven slaves. This parcel may have served primarily as a rum distillery (P. Pedesclaux, October 1, 1795, NONA). The slaves were all males, and their age range was only 24 to 34 years old.

Land transactions involving the study area were frequent and complex for the period 1800 to 1826. For clarification of this discussion, frequent reference should be made to Figures 3 and 4. A portion of Tract A would in 1818 be purchased by the Ursuline Nuns and shortly thereafter would become the site of their second convent. Tract B and a portion of Tract C would in 1821 become the property of the Widow George Deslonde. This tract includes the present study area. Finally, Tract C would become the property of the Congregation of the Holy Cross shortly before the Civil War.

Tract A, the Castillon property that included a house and rum distillery, remained the property of Castillon and his widow until 1811. Tracts B and C were, in 1800, property of the heirs of Decalogne who owned the land by 1764 (above). The Decalogne heirs engaged in a series of complex real estate transactions during the period August 2 to November 22 in 1800. One result was that J.B. Castillon purchased Tract B in November of 1800 so that he now was in possession of nine arpents fronting the river. The upper six arpents included the rum distillery, house, and other buildings purchased from Pontalba in 1795. In purchasing the additional three arpents (Tract B), Castillon also bought the "principal house and garden" located thereon (P. Pedesclaux, November 22, 1800, NONA).

Thus, there was a residence and industrial complex dating to the colonial period on Tract A as well as a residence and garden also dating to the colonial period on Tract B. The latter were presumably constructed during the long period of ownership of the property by the Decalogne family. The house and distillery on Tract A were present when Pontalba sold the property in 1795 and could have been built at any time prior to that date.

An August 2, 1800 transaction (P. Pedesclaux, August 2, 1800, NONA) by heirs of Decalogne and involving Tract C indicates that it was also the site of "constructions," and it was conveyed with cattle and farm equipment. No residence is mentioned, further evidence that the Decalogne house was the aforementioned structure on Tract B. Nine slaves were conveyed with Tract C.

On November 11, 1800 (P. Pedesclaux, November 11, 1800, NONA), Tract C was again sold by some of the Decalogne heirs, this time to Lille Sarpy. It was described as a seven by eighty arpent tract with "all the buildings, tools and utensils." Most of the same slaves were again sold with the tract

On November 13, 1800, two days after his purchase, Lille Sarpy sold the seven arpent Tract C and improvements thereon to Francisco Maturino Guerin, while at the same time selling the slaves back to one of the Decalogne heirs.

To recapitulate then, by 1800 Castillon had come to possess Tracts A and B on Figure 3, while Francisco Maturino Guerin was now the owner of Tract C. Castillon's holding was surveyed by Carlos Laveau Trudeau in 1800. The plan confirms that Castillon obtained the upper six arpents from Pontalba. The upper line of this six arpents was marked by a levee and a ditch, while the lower line was marked by a levee and a double ditch. The plan also confirms that Castillon's lowermost three arpents were obtained by him from the Decalogne heirs and indicates that it and the next parcel downriver (Tract C, now owned by F.M. Guerin) had been granted to Decalogne by the Spanish colonial government in 1785. Upon the death of J.B. Castillon in 1809, his wife the Widow Delaronde Castillon inherited the property.

In 1810, the Widow (Louise) Delaronde Castillon conveyed the three by eighty arpent habitation (Tract B) to Louis Fortin. She received a house on Royal Street in exchange (N. Broutin, August 1, 1810, NONA). In the following year, she also sold the six by eighty arpent habitation (Tract A) to Louis Fortin (N. Broutin, October 3, 1811) so that he was now the owner of nine arpents front (combined Tracts A and B, Figure 3). With the 1811 transaction, Fortin also received cattle, a mule, a yoke of oxen, a cart, a plow and other farm tools, a "mulatto" slave named Little Louis and aged 25, who was a cowman and cartdriver. Fortin paid \$30,000.00

for the six arpents and associated items listed above. The Widow Castillon would, in 1812, use the proceeds from this sale as part of her daughter's dowry.

Fortin's ownership of Tracts A and B was short-lived, as he sold the nine arpent parcel to John McDonough and Company in 1812 for 70,000 piasters. The property was conveyed with "houses and establishments" (M. de Armas, January 25, 1812, NONA). The presence of residential structures on both the six and three arpent portions of the combined nine arpent tract was noted above. Of particular significance is the fact that a brick yard was present on the three arpent tract (Tract B). That brick yard continued in use through the 1890s.

McDonough now engaged in a complex series of land transactions involving these and many other properties. In February of 1812, McDonough and Company sold the three by eighty arpent Tract B "together with the houses and establishments thereon" to Resin Davis Shepherd for 35,000 piasters. One of these "establishments" would have been the brickyard (M. de Armas, February 25, 1812, NONA). The following day, Shepherd sold the same tract "...with the houses and establishments..." to Richard Butler for 35,000 piasters (M. de Armas, February 26, 1812, NONA).

Less than two months later, Francois Guerin, who had held the seven by eighty arpent Tract C since 1800, sold it to John McDonough and Company and L.H. Guerlain for \$70,000.00. Francois Guerin purchased from McDonough a sugar plantation in St. James Parish on the same day (M. de Armas, April 8, 1812, NONA).

In April of 1812, John McDonough and Company made an exchange of lands with Manuel Andry. McDonough received properties on Dauphine and Royal Streets, while Andry received the uprivermost three by eighty arpents of Tract A. At the same time, Andry either owned or acquired the adjacent property upriver, not under discussion here. The Widow Castillon held a mortgage on Tract A of which she was the former owner, and on a second habitation and 22 slaves (M. de Armas, April 28, 1812, NONA).

About one month later, still in 1812, McDonough and Company sold the downrivermost three by eighty arpent portion of Tract A "together with the establishments thereon" to Francois Duplessis. The price was 7,000 piasters (M. de Armas, June 3, 1812).

Real estate transactions ceased until March 15, 1814 when McDonough sold his undivided half of the seven by eighty arpent Tract C to Lewis H. Guerlain (M. de Armas, March 15, 1814, NONA). This placed Guerlain in sole possession of the parcel.

Another series of sales beginning in 1817 led to a stable property configuration that persisted through the late nineteenth century. First, in 1817 Richard Butler sold the three by eighty arpent Tract B to Thomas Harmon for \$20,000.00. Included with the sale were the "...new two-story brick house thereon and all and every their appurtenances..." (M. de Armas, May 23, 1817). Date of construction of this house is unknown. However, the property was conveyed with a "principal house and garden" in 1800 (above) and with "houses and establishments" in 1812. It is possible then that the "new house" mentioned in the 1817 transaction was built some time after 1812. It stood through the early 1900s, by which time it was known as the "Delavigne House." In a conveyance record from a later date, the two-story brick house is described in greater detail, and the presence of two brick-between-posts structures is noted (Chapter 7).

In 1818, the Ursuline Nuns purchased the downriver three by eighty arpent portion of Tract A, and in 1821 they decided to move from their original convent in the Vieux Carre to this new location (Wilson 1987). They held it until shortly before construction of the Inner Harbor Navigation Channel.

In 1819, Lewis H. Guerlain sold the uprivermost 1-3/4 by eighty arpent portion of Tract C for \$10,000.00 to Thomas L. Harmon who had held the three by eighty arpent Tract B since 1817. No buildings or improvements are noted with the sale (M. de Armas, March 9, 1819, NONA). The remainder of Tract C would become the property of Thomas Urquhart and later the Congregation of Holy Cross.

In 1820, Barthelemy Jourdan purchased Tract B, now 4-3/4 by eighty arpents due to the addition in the paragraph above, from Thomas L. Harmon for \$50,000.000. Included with the sale were buildings and improvements, animals, and thirteen slaves (C. Pollock 1820, Special Collections of the Howard-Tilton Memorial Library). Jourdan purchased the property and the two-story brick house thereon for his mother-in-law, the Widow [Rosalie Picou] George Deslonde. He conveyed it to her, with the thirteen slaves, in 1821. She held it until her death

in 1835, at which time it was inherited by her daughter Rosalie Deslonde Jourdan (Succession of Rosalie Picou, Widow George Deslonde, January 16, 1835, New Orleans Public Library) who was the wife of Barthelemy Jourdan. Rosalie Deslonde Jourdan then held the property until her death in 1869. In that year, it was subdivided at public auction (Chapter 7).

CHAPTER 7 A HISTORY OF LAND USE WITHIN THE STUDY AREA

Introduction

Chapter 8 of Franks et al. (1991:115-150) presented detailed information concerning land use within the area between Sister and Deslonde Streets. The period for which data were obtained was from ca. 1723 through 1910. Sources of these data were primary documents, including conveyance records, probate records, U.S. Census records, and historic maps. The purpose was to determine the origin, nature, and extent of archeological features and deposits that might be present. The data in that chapter were used as the partial basis for a research design for archeological test excavations within the present study area (Franks et al. 1991:185-263). The discussion of land use from Franks et al. (1991) is included in this report to facilitate interpretation of features and artifacts excavated during field work. Only minor changes have been made. The most substantive of these changes are the result of a re-examination of the 1880 census records.

The Study Area, 1721 to 1731

During the 1720s, it appears that Coustillas was the owner of the concession that would later become the location of the second Ursuline Convent. Downriver from Coustillas was the concession of Sieur Trudeau. The uppermost portion of Trudeau's tract lies between Sister and Deslonde Streets (Chapter 6) and represents the present study area.

Data from the early French censuses provide information concerning the number of people on the various concessions near New Orleans. In 1721, Coustillas is listed as an officer of the Company. On his concession were one "master," three servants, and twelve African-American slaves. The "master" probably refers to Coustillas himself, while the servants probably were indentured bondsmen from France or some other European country. At that date, there were nine "masters" on the Trudeau concession. These were Trudeau, his wife, and seven children. Also present were 31 African-American slaves and one Native American slave (Maduell 1972:17). Even at this early date, Trudeau's slave holdings were large relative to those of most other concessionaires.

The 1726 census indicates that one master and eleven African-American slaves were residing at the Coustillas concession. On the Trudeau concession were one master and 25 African-American slaves. By this date, Trudeau's wife and presumably his children were residents in the Vieux Carre. Also in 1726, both Trudeau and Coustillas, along with other concessionaires, signed a letter to the Company of the Indies requesting African-American slaves (Maduell 1972:56,77). This request suggests that Trudeau and Coustillas either had undertaken or were planning to undertake cash crop cultivation, probably indigo, which was a labor-intensive activity.

In 1729, census records indicate that two masters, 33 African-American slaves, and two Native American slaves were residing at the Coustillas concession. The two masters are listed as "Le sieur Coustillas, lieutenant with Le sieur des Cayrac." The number of slaves had increased dramatically, indicating that Coustillas' request for additional African-Americans was successful. By 1729, Coustillas may have sold the lowermost portion of his original concession. The census for that year indicates that there may now have been two intervening properties between Coustillas and Trudeau. At one of these were eight African-American slaves but no master. It apparently was owned by Dupuy Planchard. The size, exact location, and nature of Planchard's tract is unknown. Below this was property belonging to Le Sieur de la Boulaye. He and his wife comprised the two masters enumerated there, and they had eight African-American slaves. At the time of the 1729 census, Trudeau was still the only master on his concession. He lived there with 45 African-American slaves. Like Coustillas, he had successfully increased his slave holdings between 1726 and 1729 (Maduell 1972:98). Both of them were probably cultivating and producing indigo on their properties by this date.

In the 1731 census, the last available for the French colonial period, one man capable of bearing arms is listed at the Coustillas concession. This is presumably Coustillas himself. With him were 38 African-American slaves and 17 African-American children. The Widow La Boulaye is still present, presumably on property between that of Coustillas and Trudeau. No men capable of bearing arms were present on her lands. She lived there with her two children, as well as eleven African-American slaves and six African-American children. Dupuy Blanchard is not enumerated in this vicinity. One man capable of bearing arms was

residing on the Trudeau concession in 1731, presumably Trudeau himself. With him were thirty African-American slaves and 23 African-American children (Maduell 1972:115).

The Study Area, 1763 to 1770

Ownership for the tract of land that would later become the location of the second Ursuline Convent is not clear for Spanish censuses conducted in the 1760s. However, it is clear that Louis Antonio Decalogne owned ten arpents (Chapter 6), the uppermost portion of which was within the present study area. The 1763 census indicates that Decalogne resided on that property with one woman, one girl under twelve, five male slaves, and five female slaves. He owned ten bull oxen, fourteen cows, and fourteen sheep. His property consisted of 140 arable arpents and 420 wooded arpents. Decalogne also owned three muskets, two swords, and two pistols (Voorhies 1973:45). The amount of cleared land extended to fourteen arpents depth. Clearing probably occurred during Trudeau's occupation. The number of slaves on the parcel had declined dramatically since ownership by Trudeau. Decalogne, unlike Trudeau, probably did not have a sufficient labor force to support cash crop cultivation.

In 1766, Decalogne was residing with one woman, one teenage boy, and eight slaves. The 1770 census indicates that he was 45 years old and that his wife was 32. It also lists his two daughters, ages 11 and 3. His holdings are described as 14 arpents, eight slaves, thirty cattle, twenty sheep, four hogs, and two muskets (Voorhies 1973:135,238). In the years between 1763 and 1770, Decalogne had increased his livestock holdings. He may have been selling dairy products and vegetable produce in the city markets.

The Study Area, 1809 through 1812

Some information concerning the study area is contained in the succession papers of Jean-Baptiste Castillon. At the time of his death in 1809, he was the owner of the property that later would be the location of the second Ursuline Convent as well as the next three arpents downriver, most of which lie between present-day Sister and Deslonde Streets (Chapter 6). Buildings on the property in 1809 included a tafia (rum) distillery. The documents indicate that the Widow Castillon then owned 82 slaves, 55 of whom resided at a sugar plantation above New Orleans. This suggests that as

many as 27 slaves may have been resident in the study area in 1809. In that year, the Widow Castillon was a resident of St. Peter Street in the Vieux Carre.

The 1810 United States census enumerates V. [Widow] Castillon as a female over 45 residing with a second female, age 10 to 16, who is undoubtedly her daughter, the future Baroness Pontalba. Apparently residing with Widow Castillon were nine slaves. It is unclear whether or not the two women were living in the Vieux Carre or on their holdings in the study area. The former possibility is more likely.

Louis Fortin obtained a total of nine arpents front from the Widow Castillon in two different transactions in 1810 and 1811. In the 1811 transaction, he also obtained one slave. Fortin sold the lower three arpents, located between Sister and Deslonde Street, in 1812. By that date, a brick yard had been established on the property. The brick yard was not noted in Castillon's 1809 succession papers. This suggests it may have been established after 1809 but before 1812.

Data from the 1820 Census

By 1820, the Ursuline Nuns had acquired the three-arpent tract that would, one hundred years later, become the location of the Inner Harbor Navigation Channel. Below them was the 4-3/4 arpent tract now held by Thomas Harmon (Chapter 6). This property lies between present-day Sister Street and property now associated with Holy Cross College, and thus includes the present study area. The 1820 census indicates that Harmon and his wife were both between the ages of 26 and 45 and that they had a daughter age 10 or under. Harmon owned eight male and ten female slaves. Five of these were under fourteen years of age.

During the year 1820, Harmon sold the tract to Barthelemy Jourdan, who was purchasing it for his mother-in-law. The thirteen slaves conveyed with the land are listed in Table 1.

Data from the 1830 Census

In 1830, the Widow George Deslonde was the owner of the tract between present-day Sister and Deslonde Streets. She was a white female, age 60 to 69. She owned 27 male slaves and eleven female slaves. Only two of her slaves were under ten years of age. Residing with her were Barthelemy Jourdan and his wife, who was

Table 1. Slaves Included in the 1820 Harmon to Jourdan Sale.

Ben	40
Johnson	40
Daniel "mulatto"	30
Richard	35
Rippia	25
James	14
David	60
Bandide	10
Eliza	15
Rachel	35
(and her three children: Caroline, Margaret, and Rachel)	

Widow G. Deslonde's daughter. The Deslonde/Jourdan household was rather large. In addition to the widow, it consisted of two free males age 40 to 49, one free male age 30 to 39, two free males age 15 to 19, two free males age 10 to 14, one free female age 30 to 39, two free females age 15 to 19, one free female age 10 to 14, one free female age 5 to 9, and one free female under 5 years of age. Some of the free adult males may have been employees at the brick yard.

The Study Area in 1835

The Widow George [Rosalie Picou] Deslonde died in January of 1835. Her only heir was her daughter Rosalie, wife of Barthelemy Jourdan. Felix Grima, Notary Public, inventoried the 4-3/4 x 80 arpent tract, which he described as being about two miles below New Orleans. The tract was bounded above by the property of the Ursuline Nuns and below by property belonging to Thomas Urquhart.

The property at that time included a number of structures. One of these was a two-story brick dwelling house with a gallery around it. The exterior kitchen was 50 x 20 ft, and was constructed of brick-between-posts. Another building the same size as the kitchen was used as a barn. Also present were two brick pigeon houses, each of which was fourteen feet long. Fronting the levee were "two small houses." Three additional "small houses," each with four rooms, were located in the interior portion of the property. Methods and materials for construction of these five houses were not described in the inventory.

There was a brick yard on the property in 1835. Associated structures were three round buildings, probably covering mixing pits or pug mills, and four kilns. Eight drying sheds measuring 130 feet in length and six drying sheds measuring 100 feet in length were present. Finally, "several negro cabins" stood on the property. These were described as being in bad condition. The 4-3/4 x 80 arpent tract with its structures, brick yard, and brick yard appurtenances was valued at \$110,000.00.

The 1835 inventory included a list of 50 "slaves belonging to the brick yard" and six "house servants" (Table 2). Thirty-four of the brick yard slaves were males aged 12 years or older. The oldest males were age 48 (one), age 40 (one), and age 34 (two). The remainder were less than 30 years old. Fifteen of the brick yard

Table 2. The 1835 inventory of brick yard slaves and house servants (Grima 1835).

"Slaves Belonging to the Brickyard"

Robert, Negro man, 26, overseer	\$ 1000.00
Peter, about 27	800.00
Jean Louis, Creole Negro, 25	800.00
Reuben, 24	800.00
James, mulatto boy, 28	800.00
Anthony, about 23	800.00
Amsted, 24	800.00
Colman, about 25	800.00
Lafortune, about 34	600.00
Johnson, 26	800.00
Amat, about 24, addicted to drinking	500.00
Demry, about 34	550.00
Beun, about 40	450.00
Johnson, about 48	800.00
Mathieu, about 26	700.00
Ostin, about 26	700.00
Bacchus, about 20	700.00
Gabriel, about 17	600.00
Louis, about 17	700.00
Hilaire, brother of Louis, about 15	600.00
Big Johnson, about 26	800.00
George, 21	700.00
Daniel, about 18	600.00
Phillipe, about 16	550.00
Mandford, about 15	450.00
Sammy, about 17	600.00
John Grums, about 32	750.00
Walis, Negro man, about 23	750.00
Allain, about 14	500.00
Henry, Creole boy, about 12	450.00
Moses, good blacksmith, about 28	1200.00
Jacques, 24	700.00
Gros Jacques, 26	750.00
Lewis, a driver and baker, 21	800.00
Laiza, Creole Negro woman, 24	600.00
Rachel, about 21 with her 6 month child	650.00
Caroline, 19, with her 1 month child	650.00
Marguerite, Creole Negro girl, about 17	600.00
Sanite, about 35	450.00
Hyacinthe, about 48	400.00
Eugene, mulatto boy, about 10	400.00
Betsy, about 22 and 4 year old child Bill	700.00
Evans, about 22 and her 8 month child	600.00
Courtney, about 28	500.00

Table 2 (cont.). The 1835 inventory of brick yard slaves and house servants (Grima 1835).

Esther, about 26	500.00
Lucinde, about 17	450.00
Daphne, about 14	450.00
Francoise, Creole Negro woman about 23, and her 3 year old child Celestine	700.00
Diana, about 40 years	400.00
Ida, daughter of Diana, about 13	<u>400.00</u>
TOTAL VALUE OF BRICK YARD SLAVES	\$ 32,350.00

"House Servants"

Louis, cook, about 50	\$ 700.00
Joe, house servant about 23, and his 8 year old daughter Maria	1000.00
Charlotte, about 12	400.00
Suzanne, washer woman, about 44	800.00
Marie, house servant, about 43	<u>500.00</u>
TOTAL VALUE OF HOUSE SERVANTS	\$3400.00
TOTAL VALUE OF ALL SLAVES	<u>\$ 35,750.00</u>

slaves were females aged 13 and over. The eldest were 48 years old (one) and 35 (one), while the rest were younger than 30. The ages of their small children ranged from one month to ten years.

One of the male slaves was described as "a good blacksmith" indicating there was a smithing facility located on the grounds. A different male slave was said to be "a driver and baker." It is likely then that a baking facility was also present.

The total value of slaves associated with the brick yard was \$32,350.00, and the house servants were valued at \$3400.00. Table 3 lists carts and livestock associated with the brick yard, and shows that the total value of these items was \$3370.00. Livestock consisted of 24 mules, five American horses, three carriage horses, fifteen cows, and three oxen. It is probable that some or all of the cows were used for milk production.

Total value in 1835 of the 4-3/4 arpent parcel with its residential structures, brick yard, miscellaneous additional structures, equipment, and 55 slaves was \$149,120.00. At the time of her death, Widow G. Deslonde also owned a three-story brick house with associated brick kitchen and grounds, worth \$63,000.00. This property (later known as the Red Store, which is still standing in the vicinity of the French Market) was on Levee Street in the Vieux Carre between Dumaine and St. Phillip Streets. She also owned a lot on St. Charles Avenue with a brick house, kitchen, and grounds valued at \$2500.00. Table 4 presents the notary's summary of the Widow G. Deslonde's assets and debts in 1835. Assets were in excess of \$250,000.00, while debts were slightly less than \$100,000.00. Her net worth at the time of her death was \$163,344.14.

Information derived from the 1835 probate inventory is complemented by data presented in Zimpel's Topographic Map of 1834 as excerpted in Figure 5. The two-story brick residence is shown on the upriver portion of the 4-3/4 arpent parcel. In front of it is a landscaped garden. Behind it are two structures of similar size. One of these is undoubtedly the brick-between-posts exterior kitchen, while the other may be the building described as the same size as the kitchen and which was in use as a barn. The two 14-foot wide pigeon houses can also be seen behind the main residence.

Table 3. Carts, Horses, and Mules for the Use of the Brick Yard (Grima 1835).

6 large carts for carrying bricks, with harnesses - \$50 each	\$ 300.00
4 smaller carts with harnesses - \$30 each	120.00
24 mules at \$50 each	1200.00
5 American horses at \$60 each	300.00
1 Barouche and 1 carriage together	800.00
3 carriage horses at \$100 each	300.00
15 cows and 3 oxen	350.00

Table 4. Summary of Assets and Debts of Widow G.
Deslonde at the time of her death in 1835 (Grima 1835).

ASSETS:

Land and Brick yard etc. below the city	\$110,000.00
Slaves	35,750.00
Carts, etc.	2,370.00
City lot	63,000.00
St. Mary lot	2,500.00
Stock	14,350.00
Cash in bank	7,705.25
Amount owed to her in various debts	<u>21,302.89</u>
 TOTAL ASSETS	 \$256,978.14
 TOTAL DEBTS	 93,634.00
 BALANCE	 163,344.14

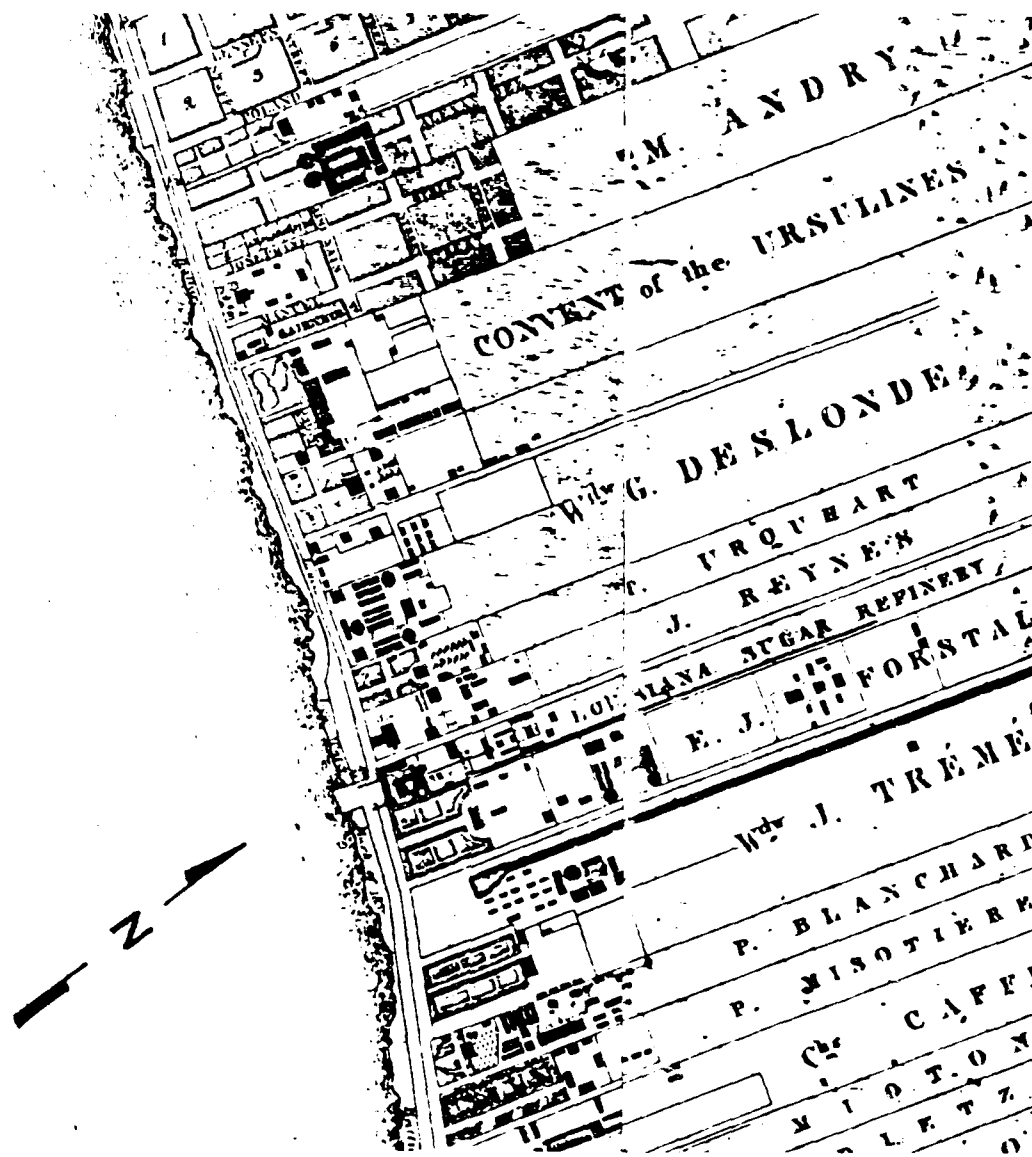


Figure 5 . Excerpt from Zimpel's Topographic Map of 1834.

Zimpel's map (Figure 5) also shows the brick yard complex at the downriver end of the property. The three round structures (actually shown on the map as octagons) mentioned in the inventory are figured. Although the inventory enumerates fourteen drying sheds, only twelve are shown on the map. Zimpel's map also shows three large structures within the complex that are undoubtedly kilns. The fact that data gathered for the map in 1833 indicates only twelve drying sheds and three kilns while the 1835 inventory enumerates fourteen sheds and four kilns suggests that business may have been expanding during the intervening two years.

Adjacent to the levee and between the main residence and the brick yard, Zimpel shows four structures. Two of these may be the "small houses" described in the inventory. Further back from the river are two more structures, behind which is a slave quarter complex consisting of three parallel rows of three cabins each. These are almost certainly the cabins described as "in bad condition" in the 1835 inventory.

The large open square directly behind these cabins probably represents a garden. This would have been tended by at least some of the thirteen female slaves aged thirteen years and over. Such a garden probably would have provided much of the food consumed both in the main residence and in the quarters.

Finally, Zimpel shows a road oriented perpendicular to the river and running to the interior of the property. Along the road are a series of seven structures. Three of these are larger than the others, and each is associated with a nearby smaller structure. It is possible that the larger structures are the three small houses said to be located on the interior of the property in the 1835 inventory. If so, the smaller associated structures probably represent outbuildings, possibly stables. The purpose of the road into the interior of the property was for the transport of timber necessary for firing bricks.

Data from the 1840 Census

The 1840 census indicates that Barthelemy Jourdan and Barthelemy Jourdan fils both resided with their families in the area between present-day Sister and Deslonde Streets. Barthelemy Jourdan's household consisted of seven free white males of whom six were under 9 years of age and five free white females of whom

two were under 15 years of age. His son's household consisted of nine free white males of whom three were under nine years of age and nine free white females of whom five were under 15 years of age.

The senior Barthelemy Jourdan was the owner of 104 slaves, 74 of whom were males. Only ten of the slaves were under ten years of age. His son owned two male and two female slaves, all between the ages of 10 and 35. The presence of 108 slaves on the property is remarkable, and it indicates that the brick yard had increased production substantially since 1835. The Jourdans were probably among the largest slaveholders in Orleans Parish at this time. Their neighbors, the Ursuline Nuns, owned only 46 slaves in the same census year, and other nearby property owners had fewer than 30.

Data from the 1850 Census

The senior Barthelemy Jourdan died in 1847. At the time of the 1850 census, his son was listed as a 30 year old white male residing with his 50 year old mother and his two sisters, ages 20 and 18. There were 21 male slaves on the property. All but two of these were over eighteen years of age. Also present were twenty female slaves, fifteen of whom were older than 16 years.

Between 1840 and 1850, the slave population at the Jourdan Brick Yard and residence had been reduced by over one-half. It is possible that the reduction was due to the sale of surplus male slaves no longer necessary for brick production. The demand for bricks may have dropped so that production was cut back. An alternate explanation is that the value of slaves on agricultural plantations was sufficiently high that the Jourdans determined it would be more profitable to sell many of their slaves and replace them with hired immigrants. The latter were increasing in numbers, and their low wages could have represented a cost-savings in comparison with maintenance of a large slave population. Increased dependence on hired laborers would also have allowed flexibility in the size of the work force, an option not available under a slave labor system which requires maintenance of a work force of a relatively constant size despite fluctuations in demand.

Also associated with the property in 1850 were livestock valued at \$700.00. These consisted of fourteen horses, eight asses and mules, and nine milk

cows. No other agricultural produce was listed. The total value of the real estate was listed as \$50,000.00.

No data pertaining to the Jourdan's residence and brick yard was located in the 1860 census records.

The Study Area in 1869

In 1869, Barthelemy Jourdan's widow, Rosalie Deslonde Jourdan, died. Her two heirs were her grandson Alfred Delavigne and her great-grandson Charles Edward Harmon Sheldon. The latter was a minor represented by his father, William James Sheldon, in proceedings related to division of the estate.

The Second District Court of the Parish of Orleans ordered that all effects of the estate be partitioned by public auction. The City Surveyor Louis Pilie and an architect prepared plats showing locations of structures and subdivision of the property into lots. A flyer for the partition auction announced:

Important Sale by Public Auction
to effect a partition
of the
Brick Yard, Kilns, Pits, etc
well known as the
"Jourdan Brick Yard"
Splendid Squares of Ground
In its Rear, under Fine Cultivation
The Substantial Two-Story Brick
Family Mansion and Dependencies;
A Large Tract of Land
in the Rear of the Brick Yard, sufficient to
supply the Brick Yard with Earth, Wood, etc.
and Lastly
That Three-Story Brick Store
Popularly known as the
"Red Store Exchange"
Situated Between the Vegetable and Beef Markets, 2nd
District

The auction was announced for April 27, 1869 at noon at the St. Charles Hotel.

The flyer and other documents associated with the partition auction provide a detailed description of the property. The riverward portion of the area that was auctioned, including most of the structures and the brickyard, is shown in Figure 6. It appears that many of the structures described in the 1835 inventory were

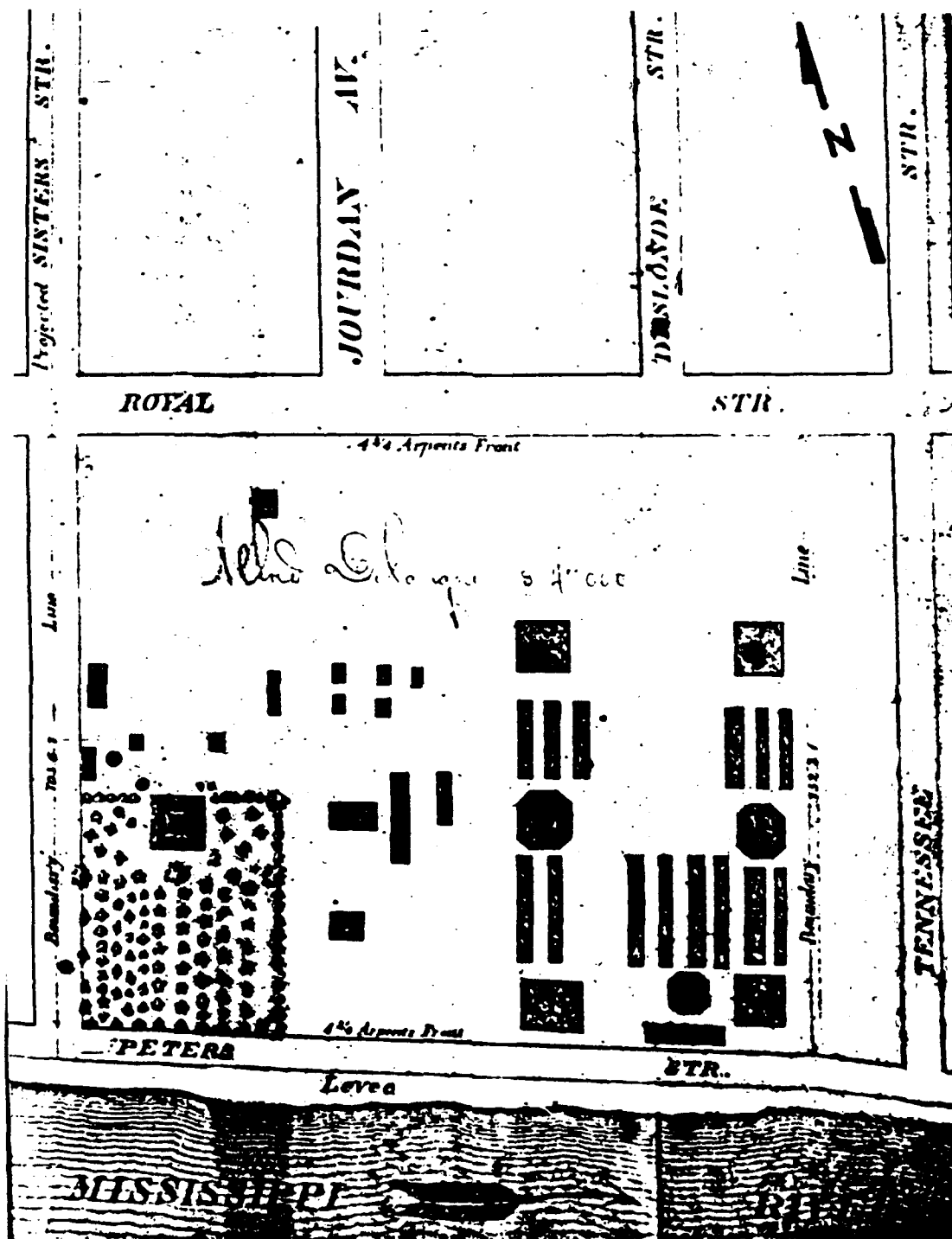


Figure 6 . 1869 plat showing the Jourdan Brick Yard and residential complex.

still present. The main residence was a two-story brick building with slate roofing. The ground floor consisted of a parlor, a dining room, two other rooms, a cabinet, a kitchen, and a vestibule with stairs. The second story consisted of four bedrooms, two cabinets, and "a splendid gallery all around the house." This is the same house that was described in less detail in 1835. During the intervening years, an interior kitchen had apparently been constructed.

Two one-story brick buildings stood behind the house. Both had slate roofing, and each consisted of two rooms and a gallery. An additional back building was brick-between-posts with four rooms. One of these may have been the exterior kitchen described similarly in 1835. The two brick pigeon houses were still present in 1869, and the rooms beneath them were in use for storage. A stable was present that could accommodate six horses and serve as a carriage house.

Also on the grounds was an overseer's house made of brick-between-posts. It had four rooms, two cabinets, a front and rear gallery, and a small kitchen in the rear. Also present was "another building of same description," apparently referring to brick-between-posts construction. This latter structure had four rooms, four cabinets, and a front gallery.

Also on the grounds were the "laborer's quarters," consisting of five cabins, each with two rooms. Computer-generated map overlays indicate that these were located adjacent to the slave quarters shown on Zimpel's earlier map. However, map error could account for the slight difference in location.

A fourth brick-between-posts building consisted of two rooms, three cabinets, and a front gallery. It had a small kitchen in the rear. Also to the rear of this structure was a stable with accommodations for eighteen mules, a corn-bin, a workshop, plus a shed and a hayloft.

The formal brick yard complex was described rather briefly as including four brick kilns, three pits, and fourteen brick sheds and racks. These are shown in Figure 6. Interestingly, the 1835 inventory noted the presence of fourteen sheds, four kilns, and "three round buildings" that would have covered the pits. Thus, the extent of the industrial complex was relatively unchanged by 1869. However, comparison of Zimpel's map to the 1869 map indicates that some changes had been

made. Computer-generated overlays indicate that the three kilns shown on the earlier map (representing the ca. 1833 configuration) were no longer present by 1869. During the intervening years, four new kilns had been erected. However, the computer-generated map comparisons suggest that the three octagonal buildings were at the same location at the time of the Zimpel and the 1869 map.

Associated with the brick yard was a small frame office with one ten-by-twelve foot room. There were 2000 yards of river sand on the premises, presumably for tempering brick. Finally, sale of the brick yard was to include those portions of the original 4-3/4 x 80 arpent tract that extended behind projected Urquhart Street to the eighty arpent line. This portion of the property was said to consist of sufficient swamp lands to supply "earth, dirt, wood, etc." necessary to carry on the brick-making industry.

The main residence, associated dependencies described above, as well as the brickyard and associated structures stood between North Peters and Royal Streets. The court order stipulated that this subportion of the larger property would be sold as a unit and that unit would also include that portion of the tract lakeward of Urquhart Street. Thus the majority of the 4-3/4 x 80 arpent tract remained undivided pursuant to the court order. The apparent purpose was to maintain the viability of the brick yard and of the residential complex associated with the main house. Alfred Delavigne, one of the two heirs, purchased the brick yard, swamp lands, and main residential complex at auction for \$47,000.00. He also paid \$2348.00 for bricks on hand, cord wood, implements and tools, mules, and cattle.

That portion of the larger tract lying between Royal and Urquhart Streets had been surveyed and divided into lots of varying sizes. These were to be sold at the same auction. The configuration of squares and lots is shown in Figure 7.

Some structural improvements were already present in the area between Royal and Urquhart Streets. Square No. 12 (Figure 7), later numbered Square 231, had a wooden house with two rooms. Also present was a stable. Square No. 13 (Figure 7), later numbered Square 232, contained three structural improvements in 1869. Two wooden houses were present, each with two rooms, as well as a double stable. Square No. 18 (Figure 7), later

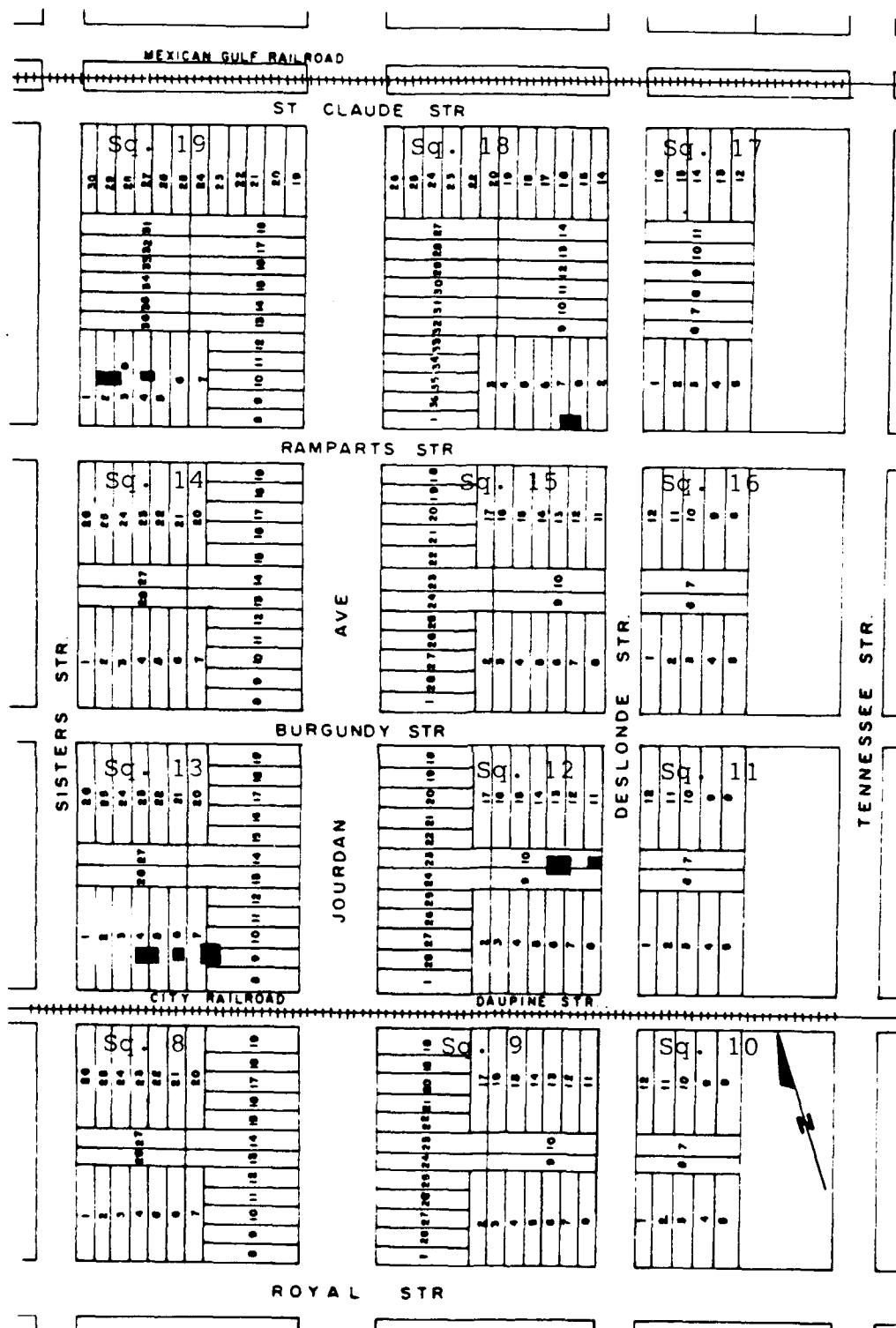


Figure 7 . 1869 plat showing subdivision of a portion of the Jourdan land holdings.

numbered Square 343, included a wooden house with two rooms and a gallery. This residence faced Rampart Street. Square No. 19 (Figure 7), later numbered Square 344, included a wooden house with two rooms, two cabinets, and a gallery. A stable was also present. The stable was behind the house, in the approximate center of the quarter-square. A cistern is also shown in the figure. Square 21, later numbered Square 421, had a one-room wooden house and a stable. These were not shown on the plats.

Also standing at the time of the 1869 auction was a two-room wooden house with a gallery and a stable. These were not shown on the plats, but they lay within the projected path of Jourdan Avenue between Marais and St. Claude. The court stipulated that the purchaser of these structures would have to move them within thirty days of the sale. They would have been located between present-day Squares 420 and 421.

It is likely that tenant truck and/or dairy farmers resided on the squares with houses and stables prior to 1869. They may have been engaged in share-cropping arrangements with the Widow B. Jourdan. Slaves were no longer available to perform gardening tasks after 1863, and they may have been replaced with tenant farmers. Portions of Squares 13 and 14 were subject to a monthly lease at the time of the 1869 auction, which is evidence for such an arrangement, particularly since Square 13 was the site of two houses and a double stable (above). There was a yearly lease on Squares 17, 22, 23, 28, 29, and on portions of Squares 18, 21, 24, 27, and 30. Squares 18 and 21 included residences, and a stable also stood on Square 21. This extensive leased area may also have been used for farming and/or dairying. Further evidence is mention in the auction flyer of "...splendid squares of ground... under fine cultivation."

Table 5 presents the results of auctions of the various squares and lots between Royal and Urquhart Streets. Purchasers are listed in that table. Examination of the plats associated with the auction shows that twelve city squares were auctioned, as well as six half-squares. The latter abut the downriver property boundary which was located halfway between Deslonde and Tennessee Streets.

As noted above, Alfred Delavigne acquired the brick yard and residential complex between Royal and Peters Streets as well as all of the property lakeward of Urquhart Street. In addition, he purchased the 2-1/2

Table 5. Summary of 1869 auction sale. Squares are shown in Figure 7.

SQUARE 8:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1,2	\$100	\$200	Alfred Delavigne
3-6,28	60	300	Alfred Delavigne
7-13	60	420	Alfred Delavigne
18,19	110	220	Alfred Delavigne
14-17,20	80	400	Alfred Delavigne
25,26	70	140	Alfred Delavigne
21-24,27	50	250	Alfred Delavigne

TOTAL COST OF LOTS WITHIN SQUARE 8: \$1930.00

SQUARE 9:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1,28	\$105	\$210	Alfred Delavigne
2,24-27	50	250	Alfred Delavigne
7,8	70	140	Alfred Delavigne
3-6,9	65	325	Alfred Delavigne
11,12	100	200	Alfred Delavigne
10,13-16	70	350	Alfred Delavigne
18,19	115	230	Alfred Delavigne
17,20-23	60	300	Alfred Delavigne

TOTAL COST OF LOTS WITHIN SQUARE 9: \$2005.00

ONE-HALF OF SQUARE 10:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1,2	\$80	\$160	Alfred Delavigne
3-6	50	200	Alfred Delavigne
11,12	60	120	Alfred Delavigne
7-10	50	200	Alfred Delavigne

TOTAL COST OF LOTS WITHIN ONE-HALF OF SQUARE 10: \$680.00

Table 5 (cont). Summary of 1869 auction sale. Squares are shown in Figure 7.

ONE-HALF OF SQUARE 11:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1,2	\$90	\$180	John Edgar Lambert
3-6	45	180	John Edgar Lambert
11,12	40	80	Dr. Gillespie West
7-10	40	160	David Douglas

TOTAL COST OF LOTS WITHIN ONE-HALF OF SQUARE 11: \$600.00

SQUARE 12:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1,28	\$140	\$280	Joseph Gaitte
2,24-27	65	325	Alexandre Castaing
3-9	110	770	Francois Bellocq
10-16	140	980	P. Berges
17-23	55	385	P. Berges

TOTAL COST OF LOTS IN SQUARE 12: \$2740.00

SQUARE 13:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-6,28	\$135	\$945	A. Castaing acting for E. Dechamps
7-13	180	1260	Louis Blaser
14-20	55	385	P. Gemar
21-27	90	630	P. Gemar

TOTAL COST OF LOTS IN SQUARE 13: \$3220.00

SQUARE 14:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-28	\$80	\$2240	Louis Blaser

Table 5 (cont). Summary of 1869 auction sale. Squares are shown in Figure 7.

SQUARE 15:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-28	\$35	\$980	John G. Monroe

ONE-HALF OF SQUARE 16:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-12	\$55	\$660	E. Dechamps

ONE-HALF OF SQUARE 17:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-16	\$30	\$480	Alfred Delavigne

SQUARE 18:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-36	\$35	\$1260	A. Luquet

SQUARE 19:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-6, 34-36	\$100	\$900	David Douglass
7-33	35	945	J.F. Barthelemy

TOTAL COST OF LOTS IN SQUARE 19: \$3220.00

Table 5 (cont). Summary of 1869 auction sale. Squares are shown in Figure 7.

SQUARE 20:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-24	\$45	\$1080	V. Deckert

SQUARE 21:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-6, 19-24	\$35	\$420	F. Daubert
7-18	25	300	A. Delavigne

TOTAL COST OF LOTS IN SQUARE 21: \$720.00

ONE-HALF OF SQUARE 22:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-11	\$17	\$187	J.N. Charbonnet

ONE-HALF OF SQUARE 23:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-13	\$9	\$117	Alfred Delavigne

SQUARE 24:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-30	\$7	\$210	Alfred Delavigne

SQUARE 25:

<u>Lots</u>	<u>Unit Price</u> <u>Per Lot</u>	<u>Cost</u>	<u>Buyer</u>
1-30	\$11	\$330	Rudolf Stahl

squares located behind the brick yard and residence, giving him title to all of the land between Peters and Dauphine.

The 2-1/2 squares between Dauphine and Burgundy were divided among a number of buyers (Table 5). Square 12 included two structures, a two-room wooden house and a stable. The plat indicates that one of these straddled Lots 9 and 10 while the other fronted Deslonde Street within Lot 10. The terms of auction had stated that if a building was situated on two lots, the lots would be sold to a single bidder. Either that rule was not followed or placement on the plat of a single structure on both Lots 9 and 10 is in error because the two lots went to separate bidders. Additional records related to the auction indicate that in May 31, 1869, George Sheldon purchased Lots 10 to 23, representing one-half of this square.

Square 13 also included structural improvements. Lots 7 to 13 and the structure thereon were sold to Louis Blaser. Lots 1 to 6 and 28 were bought by the architect A. Castaing for the account of E. Dechamps. The other two structures on Square 13 lay within this quarter-square.

Square 18, was the location of a wooden house with gallery which faced Rampart Street, and it was purchased by a single buyer, Andre Luquet. The one-quarter portion of Square 19 that contained a two-room wooden house with two cabinets and a gallery as well as a stable were purchased by David Douglass. Square 21, which contained a one-room wooden house and a stable neither of which were figured on the plats, was purchased by F. Daubert (Lots 1 to 6 and 19 to 24) and by Alfred Delavigne (Lots 7 to 18). The frame buildings lying within the projected passage of Jourdan Avenue between Marais and St. Claude, were purchased by Rudolph Stahl for \$75.00. These were moved within 30 days if the terms of auction were met.

One property outside the study area was also auctioned. It was "that three-story Brick store popularly known as the 'Red Store Exchange' situated between the vegetable and beef markets, Second District." An accompanying plat shows that this structure was in the Vieux Carre between the levee and Peters Street, fronting on the latter and located between Dumaine and St. Phillip. It is in fact the "three-story residence" described in 1835 as part of the inventory of the Widow G. Deslonde. It had, therefore,

remained in the family until this 1869 auction, at which time it was purchased by Pablo Sala for \$32,500.00. The structure is still standing in the vicinity of the present-day French Market and is now known as the "Red Store."

Table 5 summarizes the buyers, purchase prices, and lots sold at the 1869 auction. City Directory issues for 1870 through 1879 were checked to obtain information concerning the buyers and to determine whether any of them moved into the study area. Alfred Delavigne may already have been residing in the Deslonde-Delavigne House and acting as proprietor of the brick yard, although no evidence was obtained regarding this issue.

Phillip Gemar, Valentin Deckert, Andre Luquet, Louis Blaser, and Alexandre Castaing were purchasers who moved into the study area for varying periods of time. In 1871, Phillip Gemar is listed as residing on Dauphine between Sisters and Manuel Streets. In 1875, he is listed as a gardener residing on Dauphine near Jourdan. He is also listed on Dauphine Street in the 1880 census. He and his descendants continued to reside in the study area at least through 1910. In 1874, "Faltine Deckert" is listed as a driver residing on St. Claude at the northwest corner of Tennessee, while in 1875, he is listed as a gardener residing on St. Claude at the northwest corner of Jourdan. In the 1879 Directory, he is listed as a gardener residing on the south side of Jourdan between North Rampart and St. Claude. In the 1880 census, he is listed as a gardener on St. Claude.

In 1871, Andre Luquet was listed as a milkman on Rampart between Jourdan and "Delaronde." The latter street may be a misprint of "Deslonde." In 1876 and 1877, he is listed as a butcher and is no longer residing in the study area. Louis Blaser is listed in 1871 as a gardener residing on Dauphine between Jourdan and Sisters Streets. In 1876 and 1877, he is listed as a gardener residing on the west side of Dauphine between Sister and Tennessee Streets. In 1879, his residence is shown as the west side of Dauphine near Jourdan. He is listed in the 1880 census on Dauphine Street, and his employment is indicated as "market garden."

The City Directory check indicated that Alexandre Castaing was an architect. In 1871, his offices were at 56 Exchange Alley. He may have been residing in the study area, as his residence is listed as "Dauphine between the Convent and the Barracks." However, in 1872 his residence is listed as Dauphine near Flood. In 1873

he lived on "Dauphine below the Convent," while in 1874 and 1875 his residence is listed as "Dauphine near the Convent." If he was in fact residing in the study area during the period 1871 to 1875, he had moved by 1876 when his address is listed as Dauphine at the corner of Andre. In 1878 and 1879, his residence was on Esplanade Avenue.

Francois Bellocq was a grocer and saloon-keeper on Esplanade Avenue at the time he bought property within the study area. His purchase may have been intended as a locale for raising vegetables. Rudolph Stahl was also listed as a grocer, and his business and residence were on Frenchman Street. Joseph Numa Charbonnet was a cotton clerk at Phelps, McCulloch and Co. He resided on Bayou Road, at the time but later moved to Hospital Street. He presumably purchased property in the study area as a real estate investment. In 1871, Jean Francois Barthelemy was listed as a real estate agent residing on Desire Street. Jean George Monroe worked at an auction house. Francois Daubert was a clerk, probably for a cotton factor. David Douglas was an inspector of weights and measures. John Edgar Lambert and his son were blacksmiths. Dr. Gillespie West was a physician. P. Berges may have been a butcher, although his identity could not be firmly established. Finally, Marceline Eugene Dechamps was an importer of wines and brandies and a dealer in domestic liquors. The fact that these buyers were predominantly businessmen, skilled craftsmen, and professionals, and the fact that they did not move onto their newly acquired properties, suggests their purchases were real estate investments.

The Study Area ca. 1872

The map excerpted in Figure 8 provides some locational information for the earliest period following subdivision. The brick yard and associated residential complex remain intact. A number of residential structures not present in 1869 have been erected. There is one linear row of structures along Jourdan Avenue on its downriver side. Structures are also concentrated within four squares, two on the upriver side and two on the downriver side of Jourdan Avenue. This concentration apparently lies between present-day Royal and Burgundy Streets. In addition, there are isolated structures on N. Rampart, St. Claude, and as far back as present-day Urquhart Street. Data from the 1880 census (below) indicate that these structures were residential, housing both African-Americans and whites, and outbuildings related to truck farms. Data derived



Figure 8 . Excerpt from sheet 11 of a U.S. Coast and Geodetic Survey map dated 1873.

from the ca. 1875 Braun map are presented in detail in Appendix 3.

Data from the 1880 Census

The 1880 census provides data concerning residents of the study area eleven years after subdivision of the Jourdan holdings (Table 6). Because street numbers were not given, this discussion necessarily includes both sides of Deslonde. To maintain consistency in terms of population size and make-up, both sides of Deslonde are included in the following two sections of this chapter on the 1900 and 1910 census. This inclusion also provides a more accurate characterization of development of the Jourdan holdings following subdivision in 1869.

It should be noted that the discussion and table concerning numbers of dwellings and residents in 1880 are based on an underestimate. This underestimate is because of the lack of street numbers in the census record and the manner in which cross-streets are organized. In Franks et al. (1991) no data were included for cross-streets. However, a re-examination of the census records for this report allowed inclusion of some households because individuals within those households remained present on the same street in 1900. This allowed inclusion of some households on Dauphine, Rampart, and St. Claude. Further research of this nature for Royal and Burgundy might provide additional information concerning residents in 1880, and should be conducted in the course of data recovery.

By 1880, there were at least 52 enumerated dwellings within the subdivided portion of the study area. At least 284 individuals now resided on Sister, Jourdan, and Deslonde Streets and on some of the cross-streets between. Of these, 177 (62 percent) were white. The remainder were African-American. The Amazion Baptist Church had already been established on Deslonde Street to serve the relatively large African-American population.

Fifty-four of the white residents, representing 31 percent of the total white population, were foreign-born. If this percentage were calculated in terms of heads of household, it would be much higher. The calculation here includes American-born children of immigrants. Most of these immigrants were from Germany (70 percent) and France (22 percent). Only one African-American resident of the area was foreign-born. He was a 65-year old claiming birth in Africa.

Table 6. Demographic Summary of the Subdivided Portion
of the Study Area in 1880.

Enumerated dwellings.....	52
Enumerated individuals.....	284
Enumerated whites.....	177
Enumerated African-Americans.....	107
Foreign-born white adults.....	54
Born in Germany.....	38
Born in France.....	12
Born in Ireland.....	2
Born in Switzerland.....	2
Foreign-born African-American adults...	1
Born in Africa.....	1
Employed white males.....	60
Laborers.....	18
Gardeners.....	20
Butchers.....	3
Clerks.....	2
Grocers.....	2
Bakers.....	2
Cartdrivers.....	2
Lamplighter.....	1
Huckster.....	1
Blacksmith.....	1
Joiner.....	1
Carpenter.....	1
Lawyer.....	1
Tanner.....	1
Brush maker.....	1
Servant (live-in).....	1
Assistant foreman.....	1
Builder.....	1
Employed white females.....	7
Seamstresses.....	5
Gardeners.....	1
Servant (live-in).....	1
Employed African-American males.....	26
Laborers.....	23
Sugar boiler.....	1
Chopper.....	1
Cook.....	1

Table 6 (continued). Demographic Summary of the
Subdivided Portion of the Study Area in 1880.

Employed African-American females.....	19
Servants.....	11
Wash women.....	3
Seamstresses.....	3
Laborer's apprentice.....	1
Hamstress (?).....	1

Occupations of whites in the study area in 1880 showed far more diversity than those of African-Americans. Eighteen of the employed white males (30 percent) were listed as laborers, while 20 (33 percent) were gardeners or truck farmers. In contrast, 90 percent of the employed African-American males were classified as laborers. There were also differences in the percentage of employed African-American females compared to employed white females, as well as differences in the nature of employment when the two groups are compared.

Data from the 1900 Census

Data could not be obtained for 1890 because records for that census year were lost in a fire. The 1900 census, partially summarized in Table 7, indicates that the number of dwellings had increased from 52 in 1880 to 96. The total population had increased to at least 532, almost double the figure for 1880. Racial composition now was 62 percent white and 38 percent African-American, identical to the 1880 composition. Foreign-born whites represented only 16 percent of all whites in the neighborhood.

There were 104 employed white males in the study area. Of these, 25 percent were classified as day laborers, and 23 percent were occupied by truck farming, gardening, dairying, and raising poultry. The remainder of employed white males worked at a variety of occupations (Table 7). In contrast, of 60 employed African-American males, 53 percent were classified as laborers and 8 percent were occupied by gardening. Other African-American male occupations are listed in Table 7.

A much higher proportion of African-American females were employed than was true for white females. All but one of the employed African-American females were doing washing, ironing, cooking, or house keeping. Sixty-seven percent of the employed white females were doing house work, house keeping, or were servants. Other white female occupations are listed in Table 7.

Data from the 1910 Census

By 1910, the number of dwellings in the subdivided portion of the study area had increased to 142, while total population had increased to 848. Demography for 1910 is summarized in Table 8. The African-American population had declined very slightly since 1900, now

Table 7. Demographic Summary of the Subdivided Portion of the Study Area in 1900.

Enumerated Dwellings.....	96
Enumerated Individuals.....	532
Enumerated whites.....	328
Enumerated African-Americans.....	204
Foreign-Born whites.....	54
Born in Germany.....	34
Born in France.....	12
Born in Italy.....	3
Born in Ireland.....	3
Born in Denmark.....	1
Born in England.....	1
Employed white males.....	104
Laborers.....	26
Garden laborers.....	10
Truck farmers.....	8
Butchers.....	4
Blacksmith.....	4
Gardeners.....	3
House builders.....	2
Carpenters.....	2
Saloon keeper.....	2
Baker.....	2
Grocery proprietor.....	2

And one white male in each of the following occupations:

U.S. Army Private, cigar box maker, candy maker, candy manufacturer, real estate agent, poultry raiser, saw mill superintendent, saw filer, stenographer, restaurant waiter, bank cashier, solicitor, cotton sampler, night watchman, street car motoneer, street car motorman, engineer, lumber clerk, machinist, barber, cooper, saw mill fireman, slaughter house fireman, sugar refinery fireman, bartender, barkeeper, stevedore, sugar boiler, grocery clerk, notary public's clerk, cotton clerk, dry goods clerk, teamster, wheelwright, steamboat clerk, boiler maker, flour drummer, dairy farmer, dairy farm manager

Table 7 (cont.) Demographic Summary of the Subdivided Portion of the Study Area in 1900.

Employed white females.....	20
House work.....	9
Housekeepers.....	2

And one white female in each of the following occupations:

House servant, servant, waitress, forelady of tobacco company, keeper of notions store, plant nursery, drawing teacher, school teacher, seamstress

Employed African-American males.....	60
Laborers.....	32
Coal rollers.....	3
Butchers.....	3
Gardeners.....	3
Coachmen.....	2
Garden laborers.....	2
Teamsters.....	2
Longshoremen.....	2

And one African-American male in each of the following occupations:

Hostler, wagon driver, timber contractor, broom maker, candy maker, float driver, cook, clergyman, painter, cotton screwman, carpenter

Employed African-American females.....	43
House workers.....	13
Cook.....	10
Wash women.....	9
Wash and iron.....	9
Laundress.....	1
Midwife.....	1

Table 8. Demographic Summary of the Subdivided Portion of the Study Area in 1910.

Enumerated dwellings.....	142
Enumerated individuals.....	848
Enumerated whites.....	589
Enumerated African-Americans.....	259
Foreign-born white adults.....	62
Born in Germany.....	29
Born in France.....	14
Born in England.....	7
Born in Canada.....	4
Born in Ireland.....	3
Born in Norway.....	2
Born in Portugal.....	1
Born in Italy.....	1
Born in Mexico.....	1
Employed white males.....	146
Laborers.....	43
Clerks.....	12
Barkeepers.....	6
Merchants.....	6
Farmers.....	5
Salesmen.....	5
Engineers.....	4
Firemen.....	3
Coopers.....	3
Painters.....	3
Blacksmiths.....	3
Carpenters.....	3
Conductors.....	3
Butchers.....	3
Gardeners.....	3
Motormen.....	2
Boat pilots.....	2
Druggists.....	2
Bakers.....	2
Millwrights.....	2
Sugar makers.....	2
Saddlers.....	2

Table 8 (cont.). Demographic Summary of the Subdivided Portion of the Study Area in 1910.

And one white male in each of the following occupations:

steward, plumber, insurance agent, accountant, professor, apprentice dentist, inspector, servant, sampler, letter carrier, credit man, janitor, messenger, cashier, electrician, stenographer, bookkeeper, pittman, lawyer, sailor, real estate agent, mail clerk, tinsmith, cabinet maker, artist, cook, cistern maker

Employed white females.....	28
Salesladies.....	5
Servants.....	5
Teachers.....	4
Wash women.....	3
Packers.....	2

And one white female in each of the following occupations:

seamstress, milliner, farmhand, governess, cook, stenographer, bookkeeper, cashier, laborer

Employed African-American males.....	38
Laborers.....	23
Coopers.....	3
Wagon drivers.....	3
Sugar weighers.....	2

And one African-American male in each of the following occupations:

slater, fireman, plasterer, gardener, stableman, longshoreman, butcher

Employed African-American females.....	26
Wash women.....	15
Servants.....	8
Cook.....	1
Housegirl.....	1
Midwife.....	1

representing 31 percent of the total. The proportion of foreign-born whites had decreased since 1900, now representing only ten percent of the total white population. Of the foreign-born adult whites, 47 percent hailed from Germany and 23 percent from France. Others were from England, Canada, Ireland, Norway, Portugal, Italy, and Mexico. Many of the American-born whites in the study area were the children of immigrants.

In 1910, there were 146 employed white males. Of these, 29 percent were classified as laborers. Other employed white males worked at a diverse array of jobs, as shown in Table 8. There were 38 employed African-American males in the area. In contrast to whites, 61 percent of employed African-American males were classified as laborers. African-American male employment is delineated in Table 8. Only a small minority of white adult females were employed. Most of these worked as salesladies, servants, and teachers. Almost half of all adult African-American females worked. Fifty-eight percent of these were employed as wash women, while 31 percent worked as servants.

The 1910 census also indicates that the Deslonde-Delavigne House had been converted to a dormitory for inmates under the care of the Louisiana Society for the Prevention of Cruelty to Children. Residents at the institution are excluded from data presented above and in Table 8.

CHAPTER 8 FIELD AND LABORATORY METHODOLOGY

Creation of Historic Map Overlays

Prior to the commencement of field investigations, historic maps for the study area were digitized using the Intergraph CAD system at the CADGIS Laboratory at Louisiana State University in Baton Rouge. The base map for this effort was provided by the New Orleans District. The purpose was the creation of overlays to predict the locations of historic features. With the exception of the 1834 Zimpel map, block corners were utilized as reference points for digitizing the historic maps. Because the Zimpel map was drawn prior to subdivision of the area, streets were projected from urbanized areas shown on Zimpel, and their intersection with property boundaries (e.g. Sister Street) were used as reference points. Digitized historic maps included the 1834 Zimpel map (Figure 5), an 1869 subdivision plat (Figures 6 and 7), the ca. 1875 Braun map (Figures 9-13), the 1896 Sanborn map (Figures 14-16), the 1909 Sanborn map (Figures 17-21), the 1937 Sanborn map (Figures 22-24), and the 1980 Sanborn map. It should be noted that Figures 9-22 represent only those squares of the Sanborn map series where excavations were conducted, although all squares for the study area were digitized. All computer files generated by the study are curated at the New Orleans District.

Field Methodology

The study area is located on the western edge of the Holy Cross Historic District. It is bounded by Deslonde Street to the east, St. Claude Avenue to the north, and the Mississippi River Levee to the west and to the south (Figure 1). Excavations were designed to evaluate the integrity and research potential of the archeological deposits predicted to exist in the study area (Franks et al. 1991).

Excavations were conducted in three unoccupied areas: the eastern half of Square 189 (bounded by Jourdan Avenue, Dauphine Street, and the Mississippi River Levee), the unoccupied portions of Square 122 (bounded by Deslonde Street, Royal Street, Jourdan Avenue, and the Mississippi River Levee), and a lot at the corner of Dauphine and Sister Streets within Square 232. The former two areas included a variety of residential lots as well as locations of former improvements to the Jourdan Brickyard, while the latter

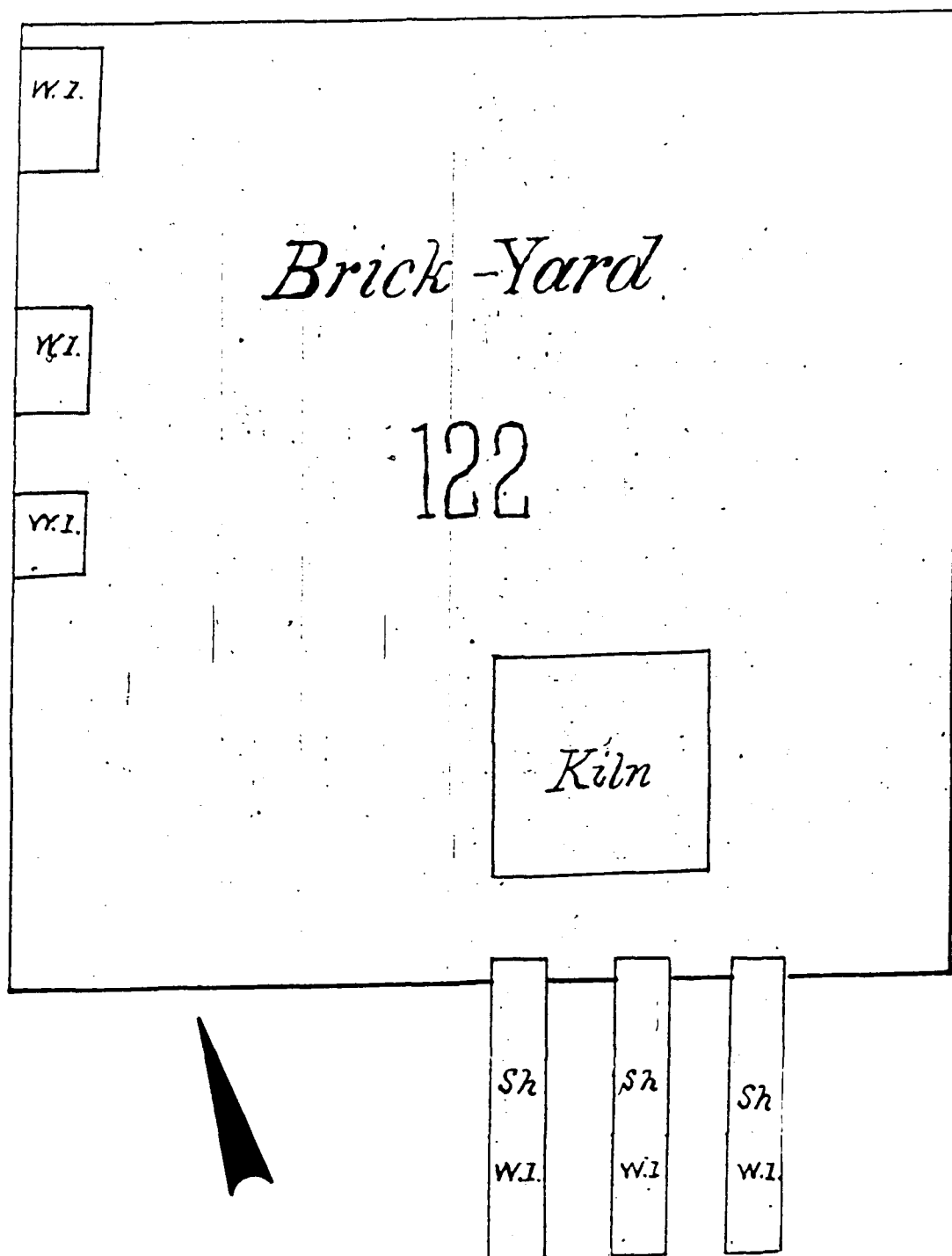


Figure 9. Excerpt from the Surveyor's Office Plan Books, Third District, 1874-1881, showing Square 122 (Historic New Orleans Collection). No scale available.

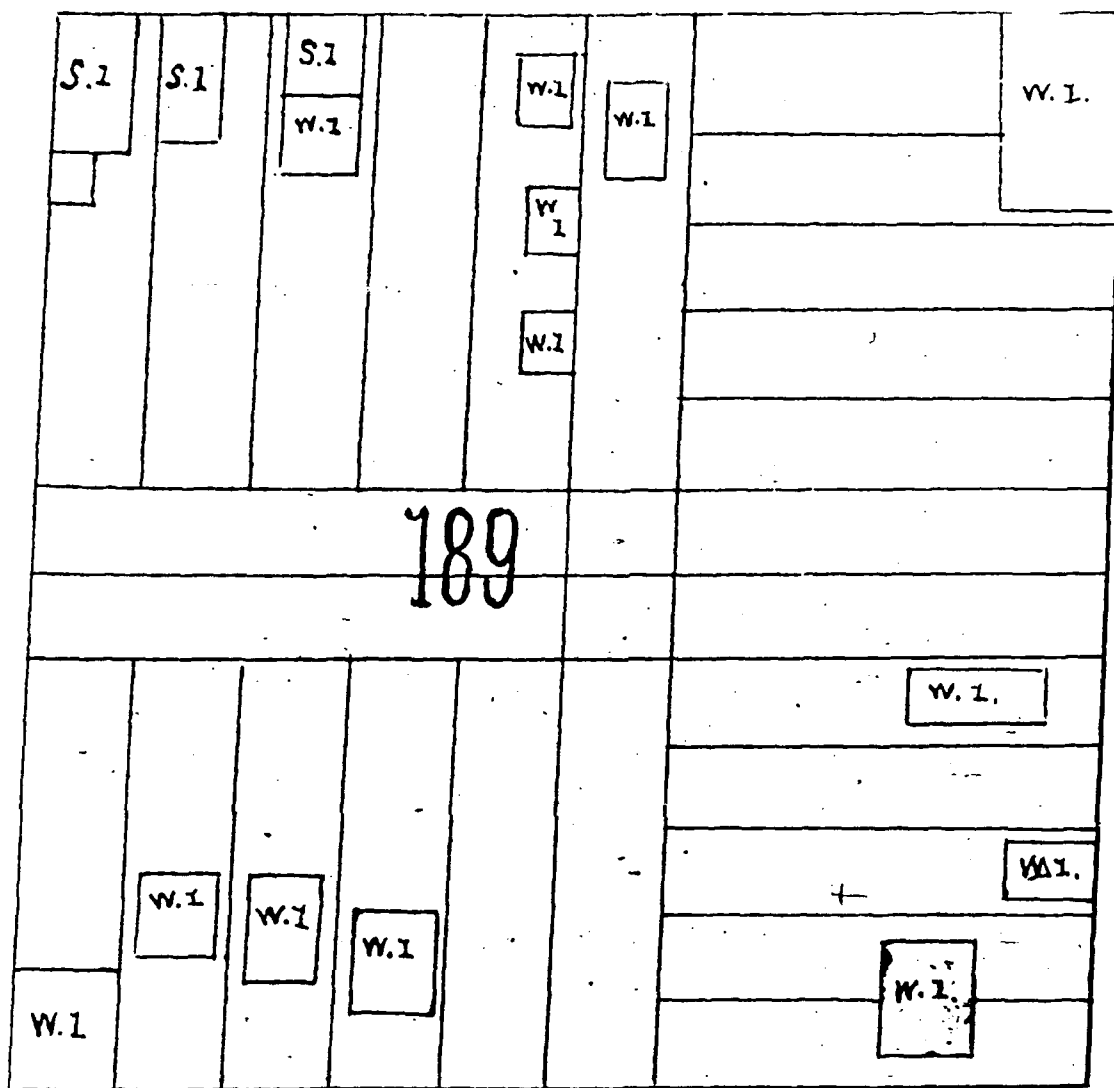


Figure 10. Excerpt from the Surveyor's Office Plan Books, Third District, 1874-1881, showing Square 189 (Historic New Orleans Collection). No scale available.

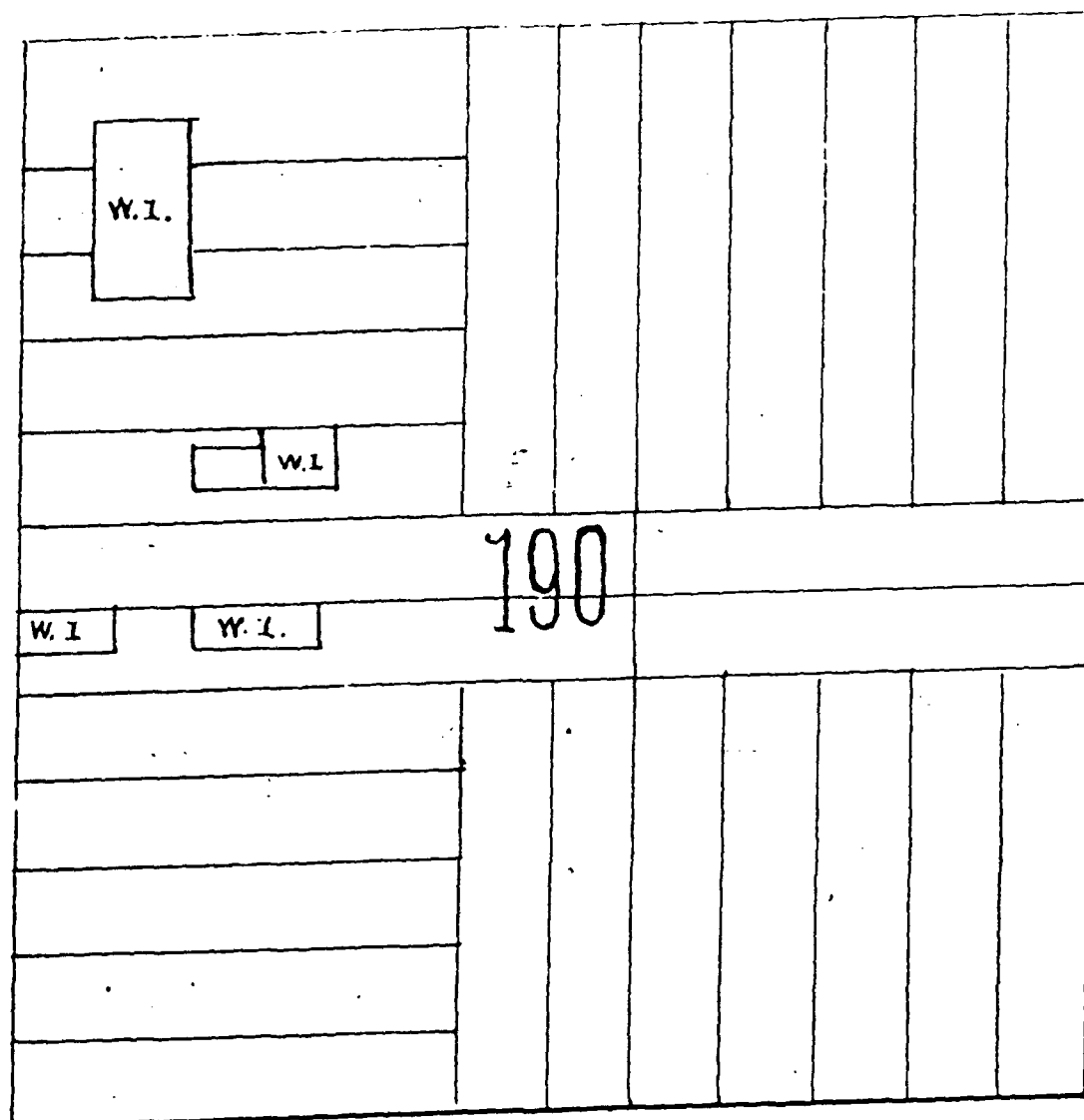


Figure 11. Excerpt from the Surveyor's Office Plan Books, Third District, 1874-1881, showing Square 190 (Historic New Orleans Collection). No scale available.

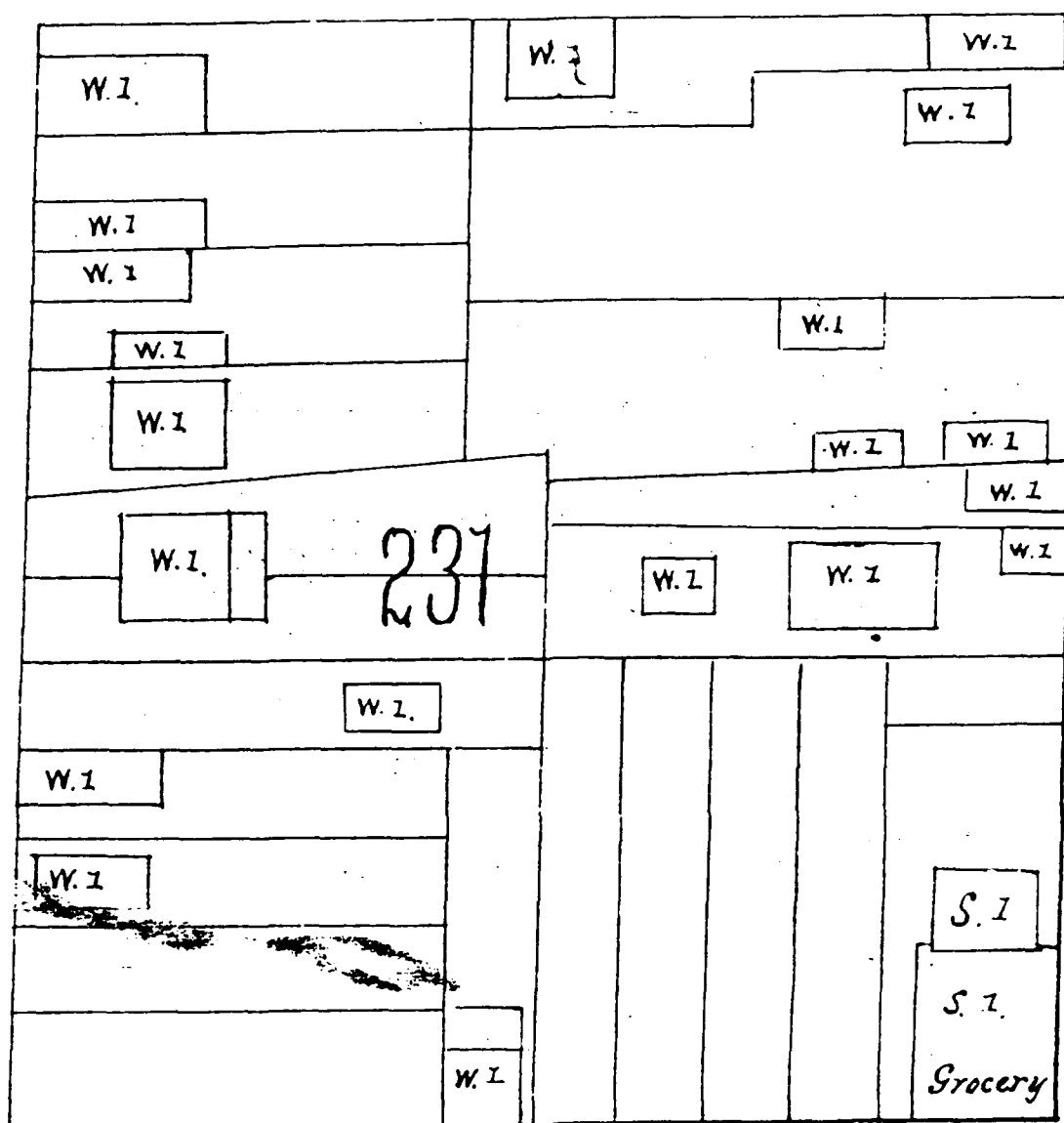


Figure 12. Excerpt from the Surveyor's Office Plan Books, Third District, 1874-1881, showing Square 231 (Historic New Orleans Collection). No scale available.

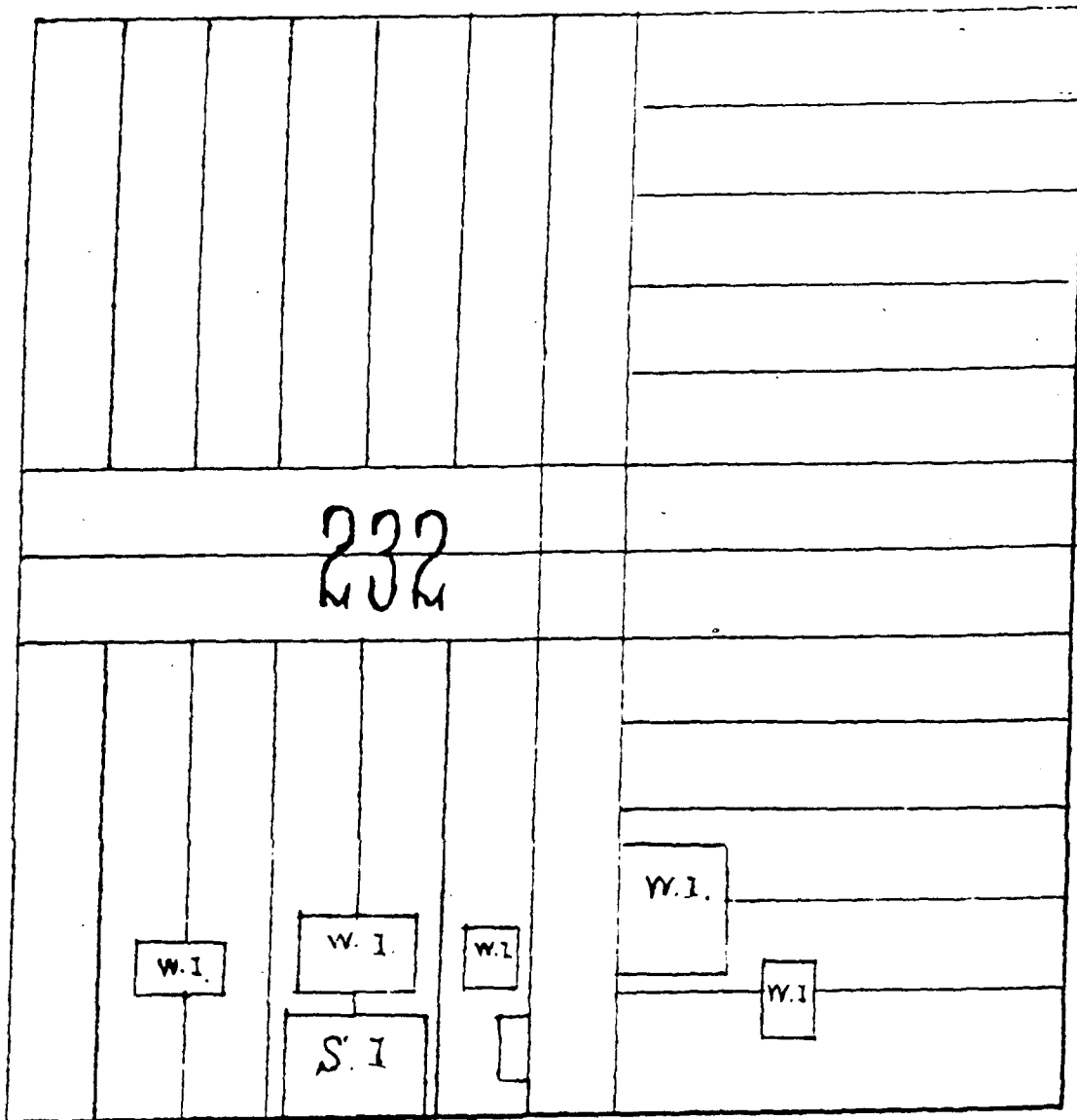


Figure 13. Excerpt from the Surveyor's Office Plan Books, Third District, 1874-1881, showing Square 232 (Historic New Orleans Collection). No scale available.

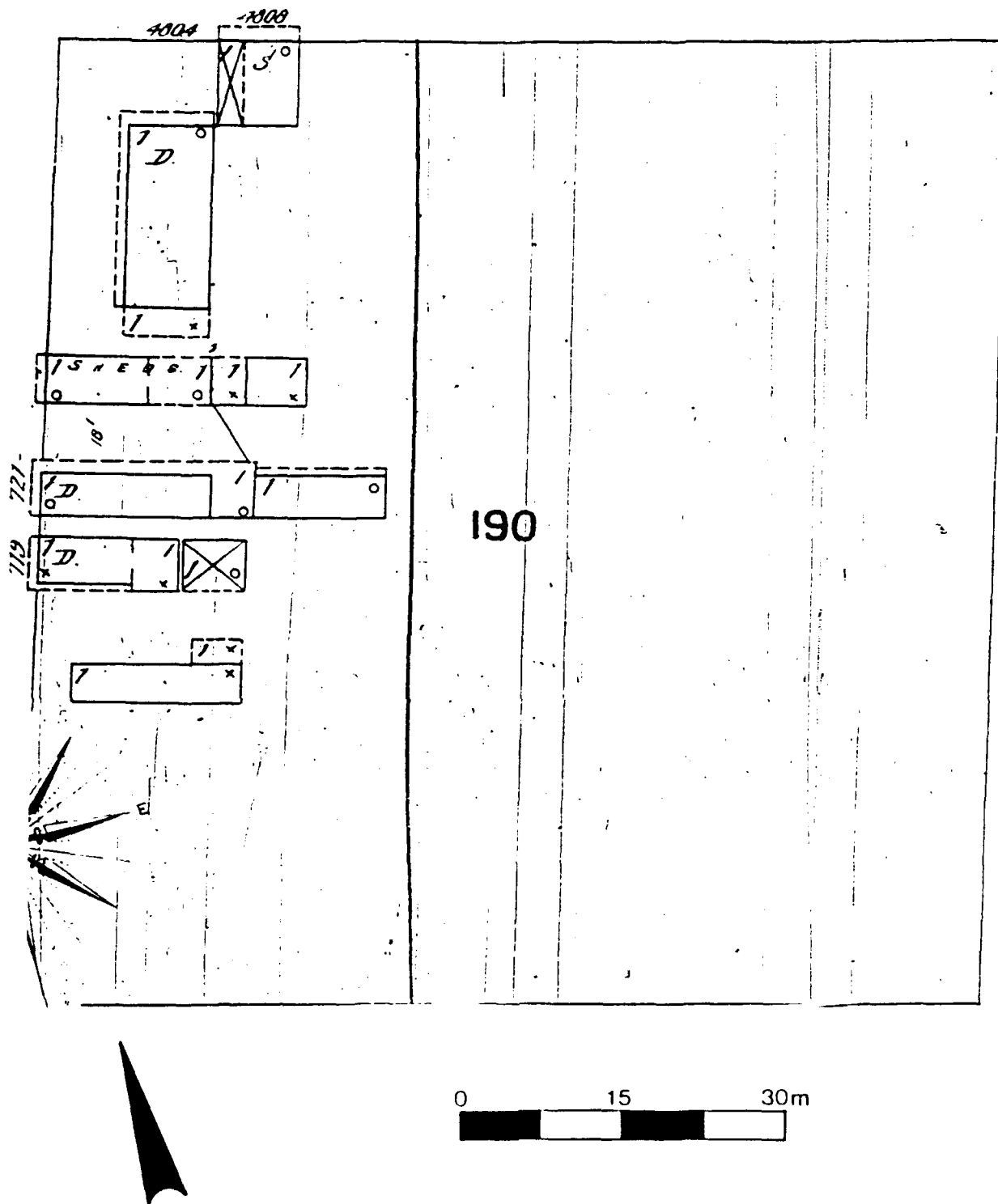


Figure 16 . Excerpt from the 1896 Sanborn Insurance Map showing Square 190 (Historic New Orleans Collection).

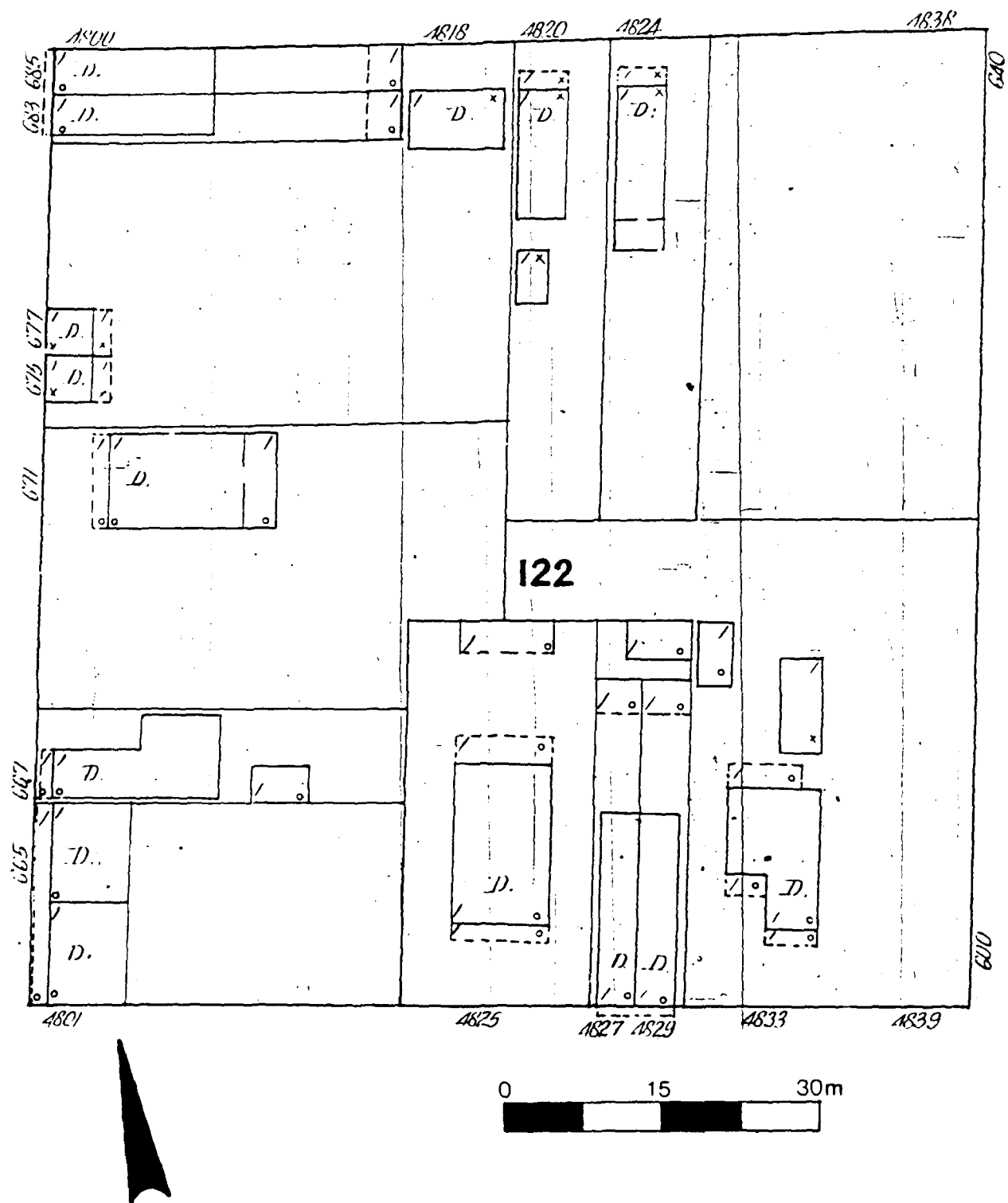


Figure 17. Excerpt from the 1909 Sanborn Insurance Map showing Square 122 (Historic New Orleans Collection).

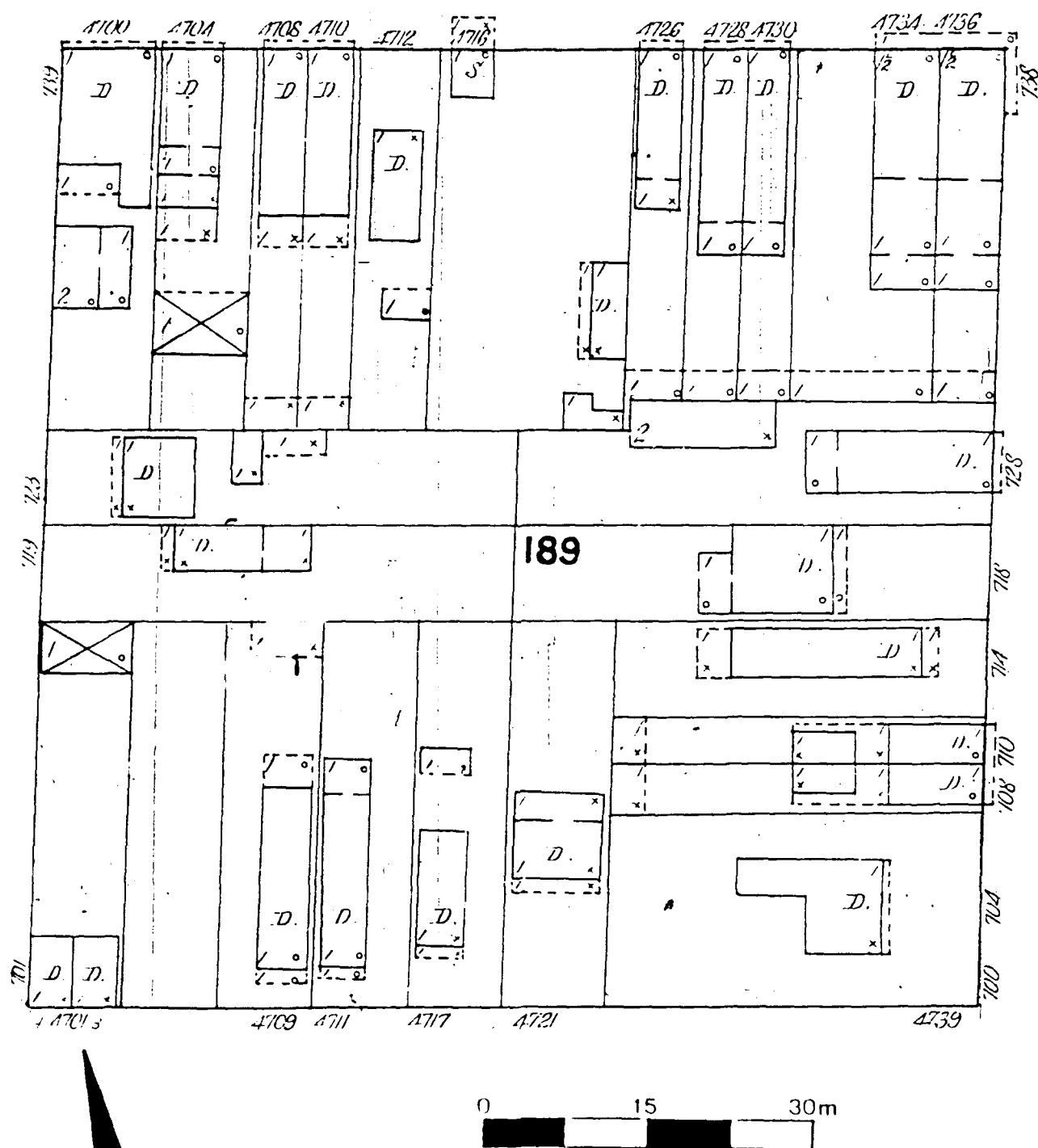


Figure 18. Excerpt from the 1909 Sanborn Insurance Map showing Square 189 (Historic New Orleans Collection).

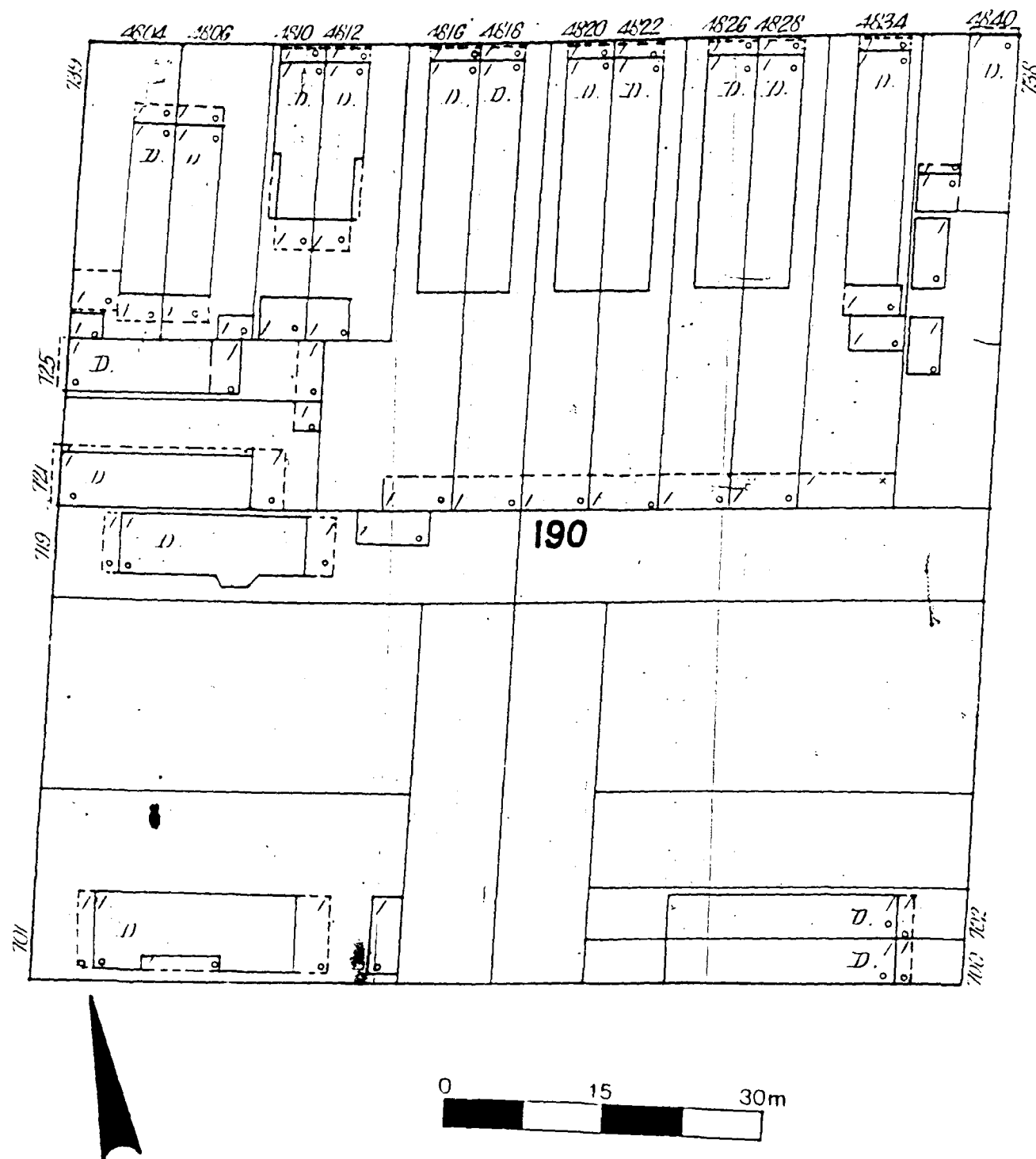


Figure 19. Excerpt from the 1909 Sanborn Insurance Map showing Square 190 (Historic New Orleans Collection).

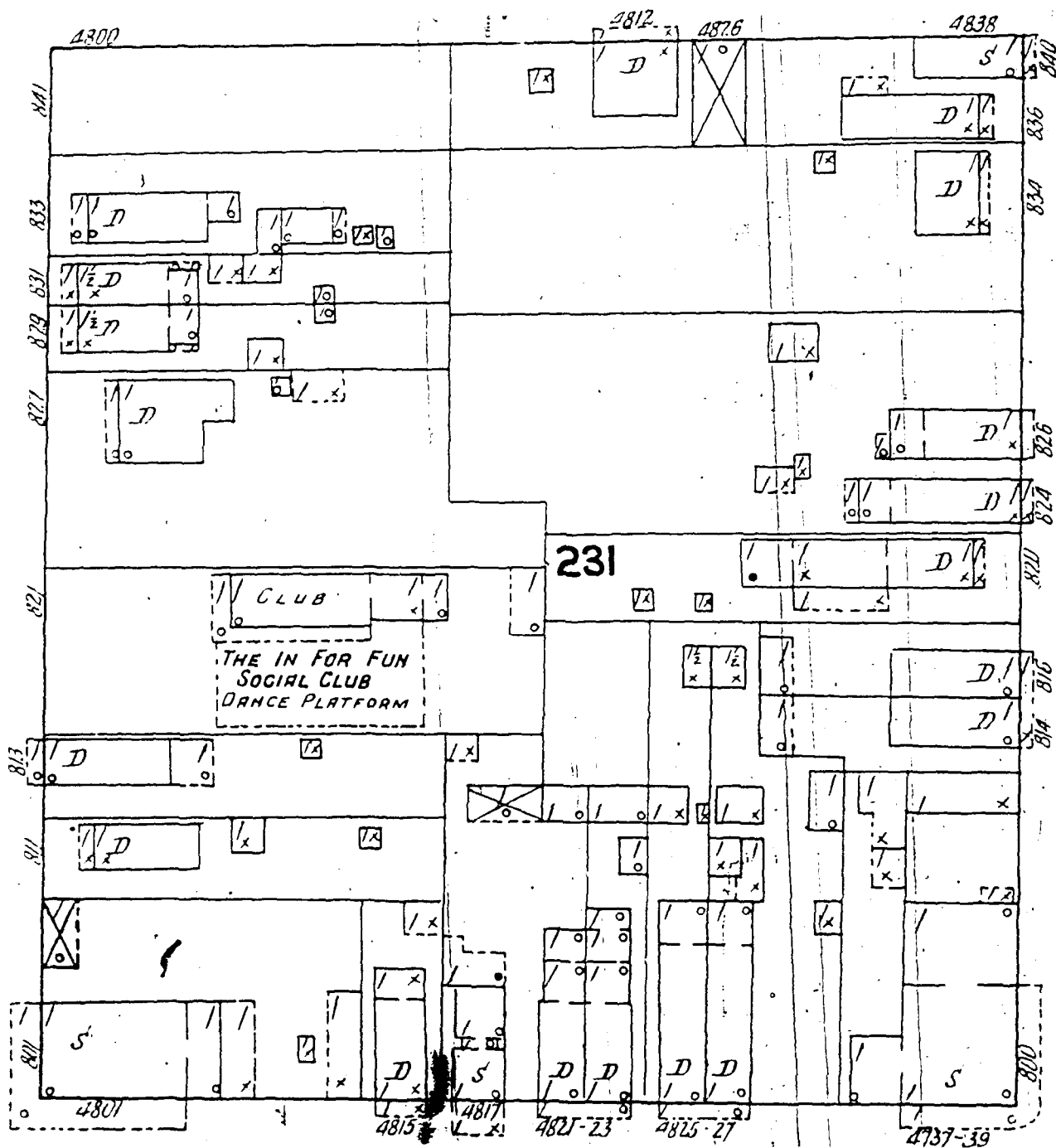


Figure 20. Excerpt from the 1909 Sanborn Insurance Map showing Square 231 (Historic New Orleans Collection).

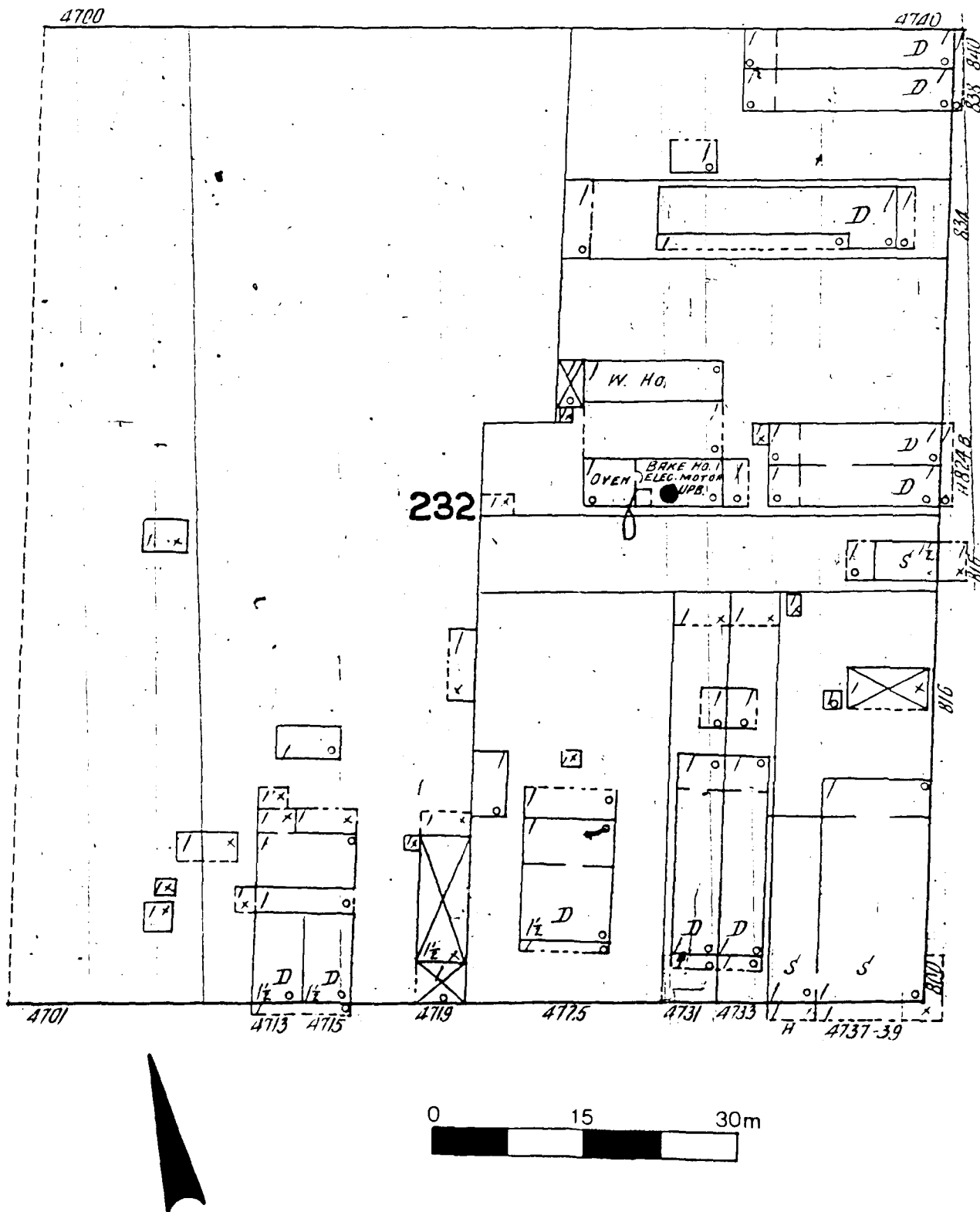


Figure 21. Excerpt from the 1909 Sanborn Insurance Map showing Square 232 (Historic New Orleans Collection).

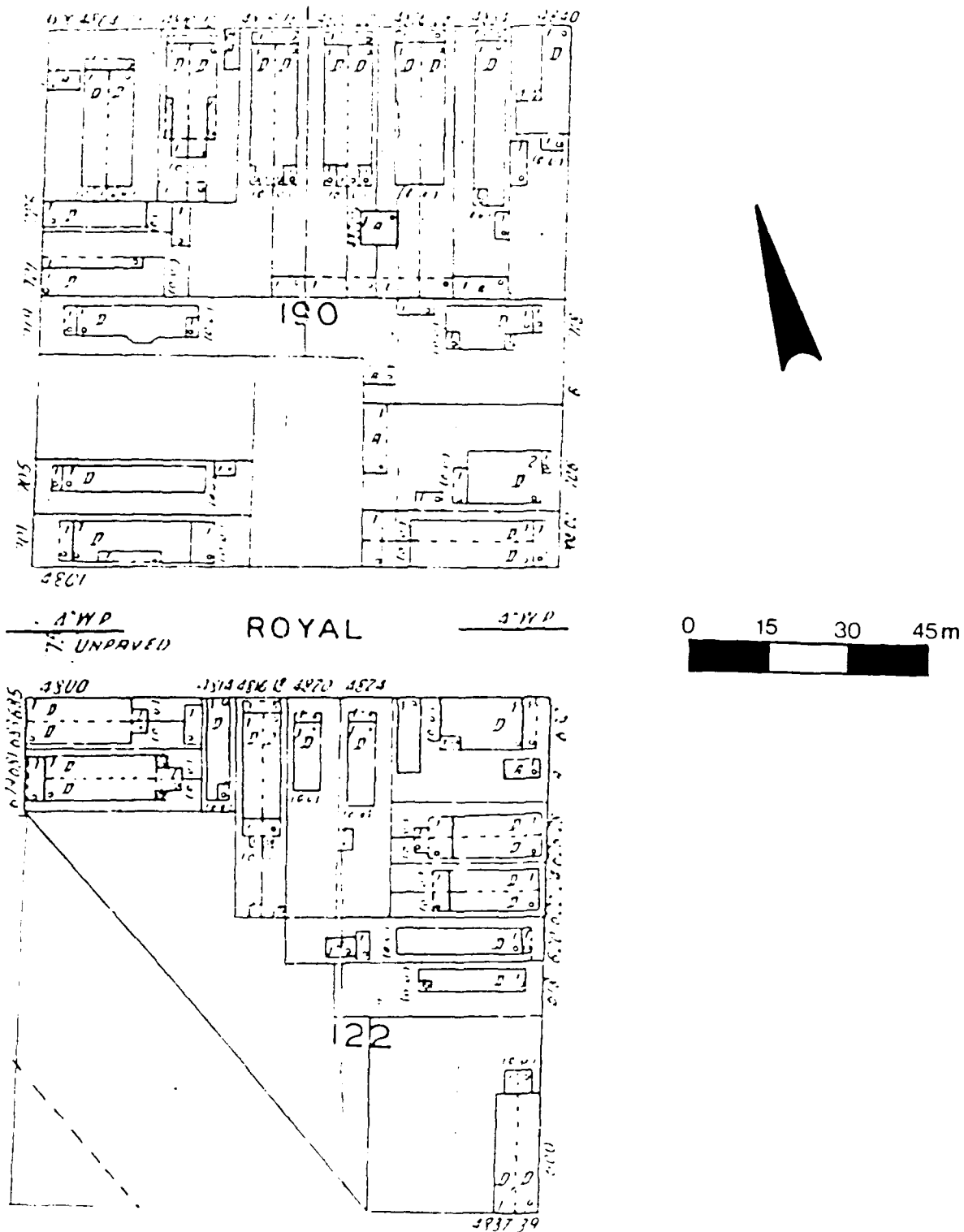


Figure 22. Excerpt from the 1937 Sanborn Insurance Map showing Squares 122 and 190 (Historic New Orleans Collection),

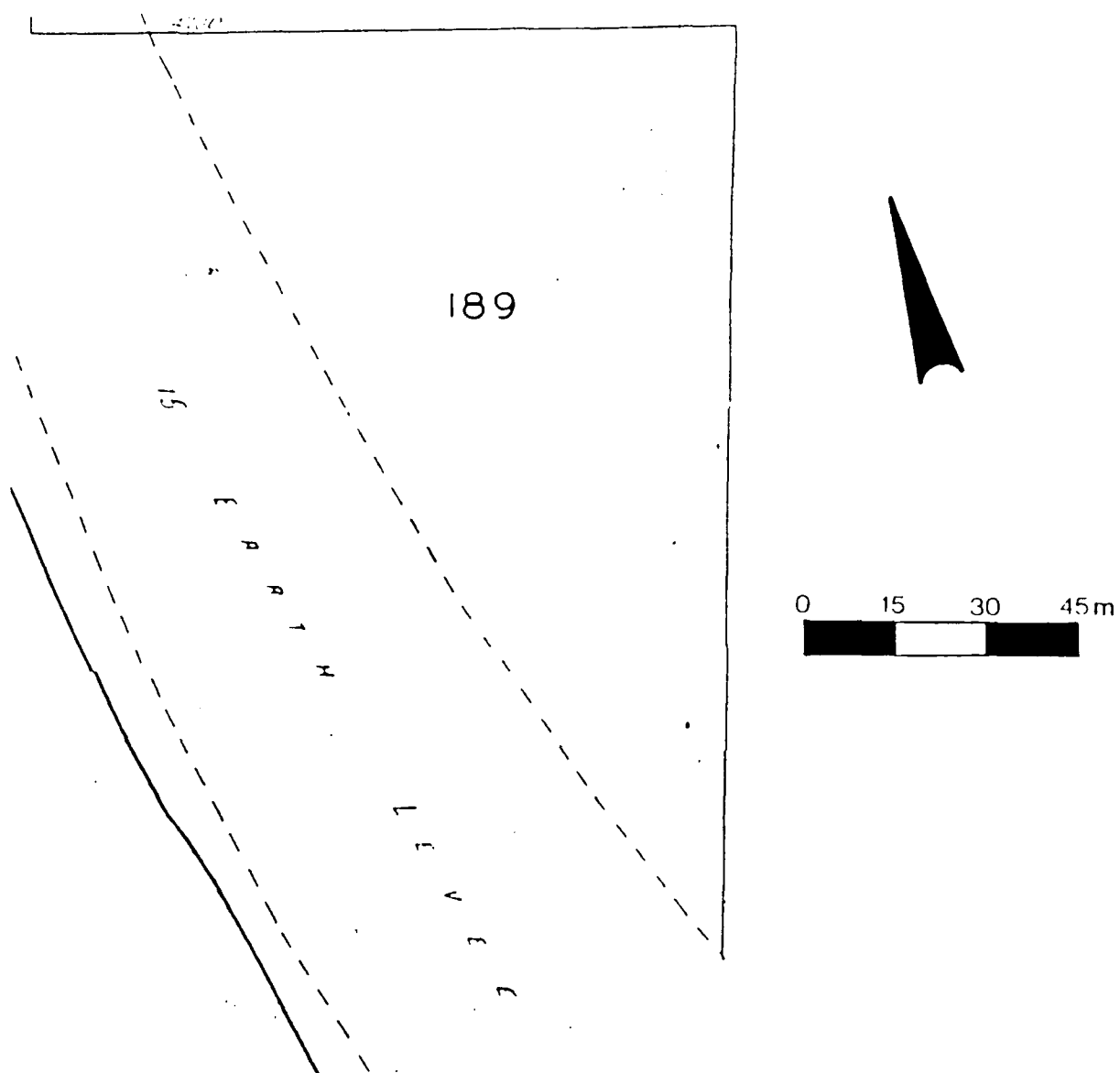


Figure 23. Excerpt from the 1937 Sanborn Insurance Map showing Square 189 (Historic New Orleans Collection).

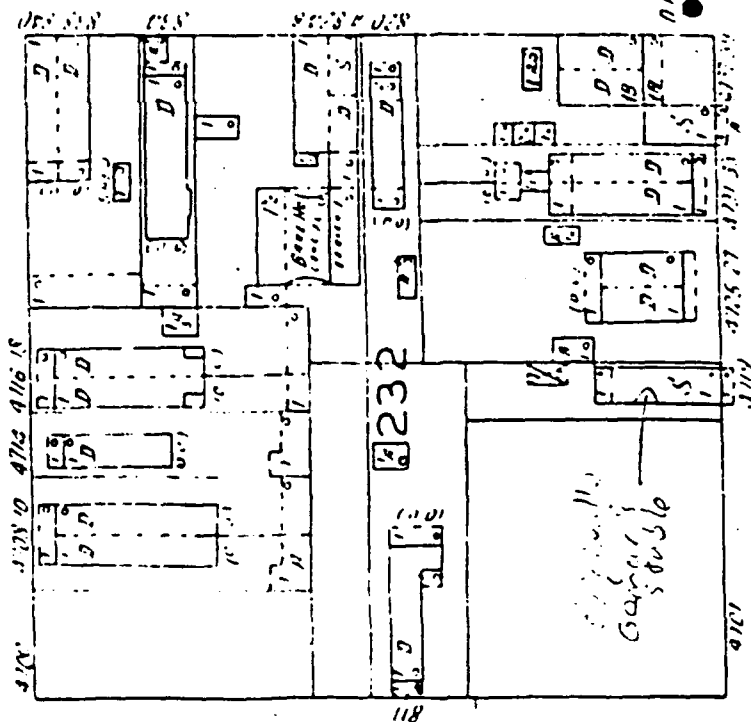
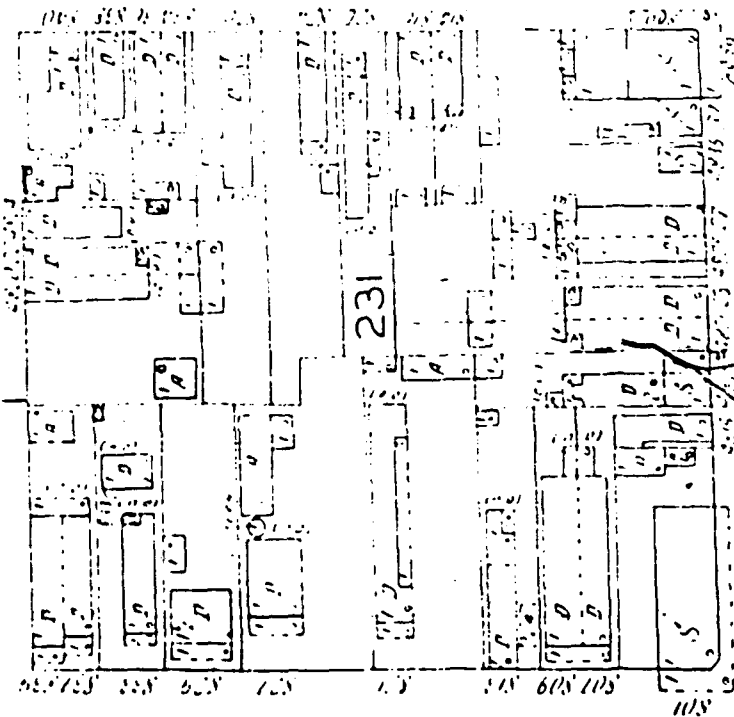


Figure 24. Excerpt from the 1937 Sanborn Insurance Map showing Squares 231 and 232 (Historic New Orleans Collection).

was a portion of a German immigrant family's truck farm from at least 1880 to 1910. In addition, excavations were conducted at five presently-occupied residential lots. These lots were selected on the basis of continuity of residence during the period 1880 to 1910. These lots included:

4840 Dauphine: This property was occupied by a white carpenter and his family from at least 1900 to at least 1910.

820 Jourdan: Archival research suggests that a meat market was present at this location during at least 1899 and 1900.

829 Jourdan: The structure standing at this address was occupied in 1900 and in 1910 by an African-American family. The family may have resided here as early as 1885.

824/826 Jourdan: The residential structure here was occupied by a German family in 1900 and 1910. Behind the residential structure was a bakery operated by the same family.

834/836 Deslonde: The structure standing here occupies part of the lot formerly occupied by an African-American family from at least 1880 to at least 1910.

In accordance with the current guidelines of the Louisiana Division of Archeology, a state site number was obtained for each city square within which excavations were conducted. Table 9 lists site numbers, square numbers, and bounding streets.

A comparison of Figure 1 and Figure 25 (the study area site map) shows that no excavations were conducted within the four northernmost squares of the study area. However, the history presented in Chapters 6 and 7 indicates that land use in those squares has been no different than in the squares where shovel tests and units were dug. Therefore, the field work reported here represents a sample of the larger area.

Study Area Map. A study area map was produced using a six-inch Schneider transit (Figure 25). A datum was established on each square where excavations were conducted, or in the cases of Squares 231 and 232 (16OR133 and 16OR134), separate datums were established for each fenced lot in order to facilitate laying in the

Table 9. Site Numbers for New Orleans City Squares
Within Holy Cross Historic District Where Excavations
were Conducted.

Site Number	Square	Bounding Streets
16OR130	122	Deslonde, Royal, Jourdan and the Mississippi River Levee
16OR131	189	Jourdan, Dauphine, and the Mississippi River Levee
16OR132	190	Jourdan, Royal, Deslonde, and Dauphine
16OR133	231	Jourdan, Dauphine, Royal, and Burgundy
16OR134	232	Jourdan, Dauphine, Royal and Sister

grid. Five by five meter square grids were then established for each city square or each lot within a square. To simplify this process, grid north was established parallel to Jourdan Avenue. Excavation units and cultural features adjacent to the excavation areas were depicted on the map. A Levee Marker Survey Station on the east side of the St. Claude Avenue Bridge was utilized to provide horizontal control, and an NGS marker on the west side of the bridge was utilized for vertical control.

Following the completion of field investigations, the study area map was also digitized. Property boundaries were utilized as reference points for digitizing the map. Overlays of the study area map and the historic maps were then utilized to facilitate identification of features located during shovel testing and to assist the analysis of artifact distribution in shovel tests (Chapter 9).

Shovel Tests. Shovel tests (n=383) were excavated at gridded five meter intervals in each of the areas investigated. All shovel tests measured 30 x 30 cm and were excavated to a minimum depth of 30 cm. Excavated soil was screened through 1/4" mesh. Cultural materials recovered from shovel tests were placed in plastic zip-lock bags labelled with the site designation, the shovel test grid coordinates, the date, and the excavator's initials.

When features were encountered during the excavation of shovel tests, these were cleared within the unit and described in terms of appearance, probable function, and condition. In addition, probing was utilized to determine the probable dimensions of the feature wherever possible. In many cases it was impossible to accurately probe the features because of the presence of subsurface debris.

Following the excavation of shovel tests at gridded 5 m intervals, additional shovel tests, auger tests, and probing were undertaken to facilitate the placement of excavation units. These tests were judgmentally placed in order to recover additional data on features noted during systematic shovel testing and to locate specific features illustrated on historic maps.

Excavation Units. Four units were excavated during field investigations. These were excavated in arbitrary levels of 20 cm or less to sterile substrata. Excavation by natural strata was employed when possible.

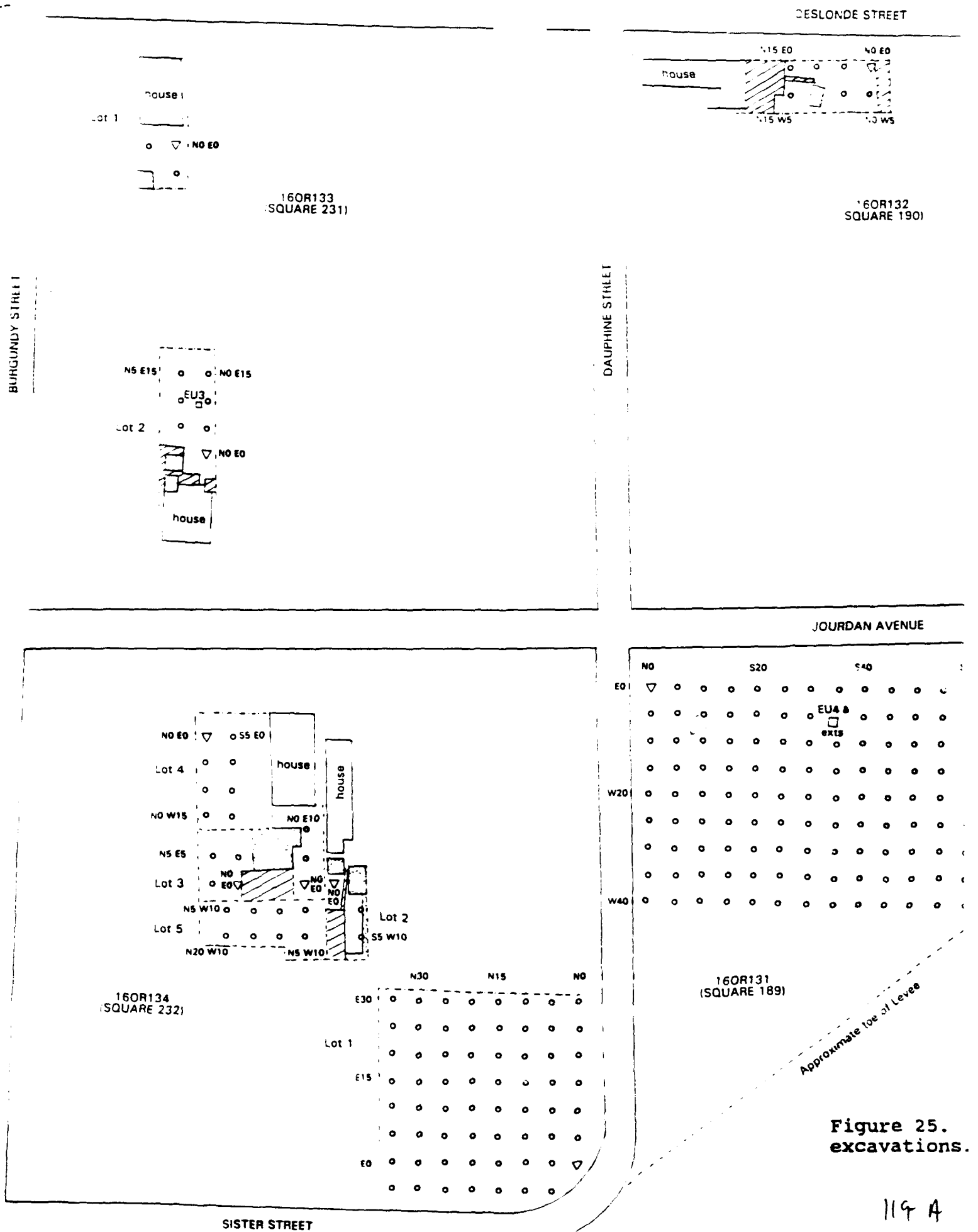
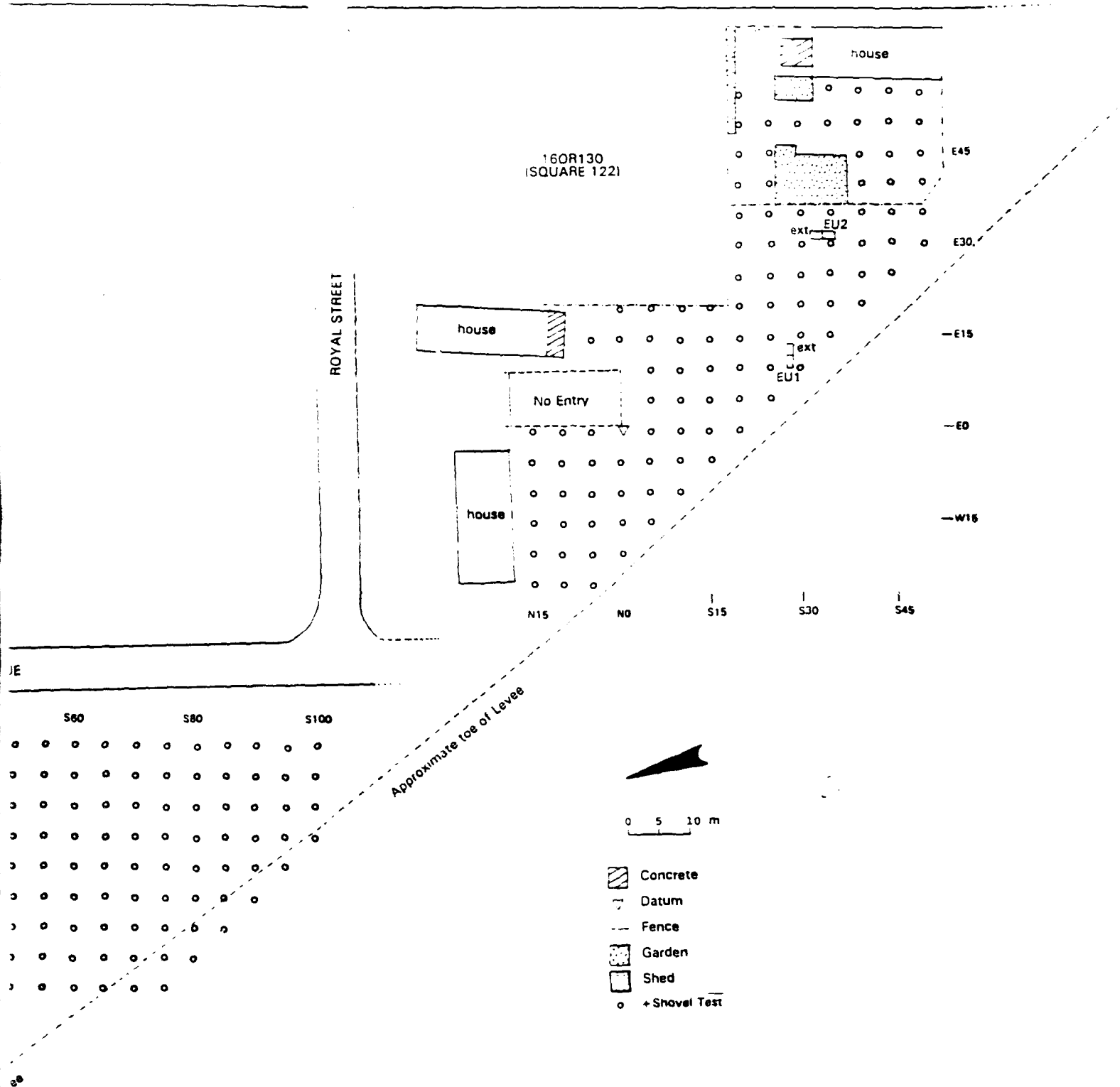


Figure 25.
excavations.



25. Map of a portion of the study area showing tions.

The units measured 1 x 4, 1 x 4, 1 x 1, and 2 x 2.5 m. All excavated soils were screened through 1/4" mesh. Cultural materials were collected from each level and placed in plastic zip-lock bags labelled with the site designation, excavation unit designation, level number, depth, excavator's initials, and date. Soils were collected from selected strata and features for flotation and laboratory water-screening through nested 1/4-, 1/8-, and 1/16-inch mesh. At least one profile of each excavation unit was drawn, and plans were drawn of unit levels as necessary. Strata within each excavation unit were characterized according to soil type and Munsell color. An auger test was excavated in the floor of each completed unit to the depth of 1 m in order to characterize underlying soils.

Laboratory Methodology

Cultural materials recovered from Holy Cross are presented in Appendix II. Collected materials recovered in the field were washed, sorted, and identified. Ceramics were classified utilizing the paradigmatic classification summarized below, and backmarks were identified and dated wherever possible. Glass was described by color, manufacturing attributes (below), and function when identifiable; at minimum sherds were sorted by color and counted. Marked and embossed bottles were identified and dated when these data were available. Nails, buttons, pipes, and marbles were classified and dated as described below. Other artifacts were described and dated as possible.

Various cultural materials collected from the excavation units (e.g. cinders, coal, gravel, shell) were weighed rather than counted. Because these items were only sampled within the shovel tests, only their presence was noted. Other artifacts, such as unidentifiable metal and bone, were both counted and weighed for the shovel tests and the excavation units.

As noted above, soil samples were removed from the field for laboratory water screening. The samples were measured, and the soils were washed through nested screens of 1/4", 1/8", and 1/16" mesh. Material collected from the 1/4" screen was sorted and classified in the same manner as material collected in the field. Materials recovered from the 1/8" and 1/16" inch screens were weighed, and the presence of broad categories of material (e.g. brick, coal, ceramics, glass) was noted. In addition, unusual small items, such as beads and fish scales, were separated out and counted.

One two-liter flotation sample was taken from a feature in each of the four excavation units. A 50-gallon flotation tank was utilized to separate light and heavy fractions. Large amounts of carbon remained in the heavy fractions following flotation. Therefore, sugar flotation was performed on the heavy fractions after they had dried. A solution of 2.5 lbs of sugar per gallon of water was utilized. Material left in the heavy fraction was sorted and classified in the same manner as material collected in the field. The light fractions and the sugar flotation fractions were analyzed by Mr. Phil Dering of Texas A & M University. Faunal material from two excavation units (EU3 and EU4, below) was analyzed by Dr. Elizabeth J. Reitz of the University of Georgia.

Ceramic Classification. As noted above, a paradigmatic classification was utilized for the ceramics from Holy Cross. This classification is presented in greater detail in Yakubik (1990). The discussion below summarizes chronological information provided by ceramics.

Cream-colored earthenware was produced in England as early as the 1740s. The composition of the paste was the same as that of white salt-glazed stoneware, but it was fired at a lower temperature, colored with metal oxides, and covered with a lead glaze (Noel Hume 1972:350). In 1759, Josiah Wedgwood and Thomas Whieldon produced a cream-colored earthenware body covered with a fluid green glaze. The ware was not popular, and Wedgwood embarked upon further refinements of the cream-colored paste. By about 1762, he had developed creamware, which he called "creamcolour," and which is also known as "Queen's ware" (Noel Hume 1970:124, 1972:350). Creamware has a thin, refined cream-colored earthenware paste covered with a clear lead glaze which appears yellowish or greenish in vessel crevices. Importation to the American colonies began at least as early as the 1760s, although it and other British ceramics did not appear in quantity in Louisiana until the 1780s (Yakubik 1990). The ware continued in use through the first two decades of the nineteenth century. The popularity of creamware contributed to England's increasing control of the world ceramic market in the late-eighteenth century (Miller 1980).

Although decorated creamware was produced, creamware recovered from archeological contexts is usually plain. Creamware occasionally is found with annular decoration, which consists of multiple

horizontal bands of multi-colored slips around the vessel often in conjunction with engine-turned decoration. Annular decoration is found on creamware after ca. 1785 (Noel Hume 1970:131).

Variants of annular decoration include mocha and finger-painted decoration, both of which also include bands of multi-colored slips. The latter consists of colored slips which are swirled together to give a marbled effect. Mocha decoration is so named because it resembles the dendritic patterns of quartz from Mocha on the Red Sea. The brown, fern-like pattern is produced by a tobacco infusion in stale urine and turpentine which is applied to the colored-slipped body (Van Rensselaer 1966:337). Both are found on creamware from the 1790s to the early-nineteenth century.

Wedgwood developed pearlware from creamware by 1779. Noel Hume (1969:390; 1970:128) notes that although the pearlware paste contains more flint than that of creamware, the cream-colored earthenware pastes of the two are virtually identical (Sussman 1977:105). However, the lead glaze of pearlware is tinted with cobalt oxide. The cobalt has the effect of whitening the appearance of the cream-colored earthenware body of pearlware.

Unlike creamware, pearlware was usually decorated. One of the most common forms of decoration on pearlware is shell-edging. This consists of a molded, shell-like rim that is decorated with either blue or green hand-painting. While Noel Hume (1970:131) states that eighteenth-century examples tend to be finely painted with individual brush strokes evident on the rim, and that later pieces are less well-executed, Sussman (1977:108) did not find these criteria helpful for dating. Instead, she suggests that eighteenth-century traits include a flat rim which may have an upturned brim and which has sharply defined edges. Bases are either flat, countersunk, or have a rounded ring foot. Nineteenth-century examples are more similar in appearance to whiteware (below). Traits include concave or S-shaped rims with rounded edges and wedge-shaped or double-ridged foot rings (Sussman 1977:109). In addition, nineteenth-century pearlware sometimes exhibits a variety of fronds, garlands, and floral devices molded on the edge and painted in blue or green (Sussman 1977).

Transfer-printing is also frequently found on pearlware. The technique of transfer-printing was

developed in the mid-eighteenth century. It involved engraving a plate with the desired pattern and printing it on tissue paper. The paper was laid on the vessel, transferring the pattern to the piece. Blue transfer-printed pearlware was first produced in quantity in the 1790s. Blue was by far the most common color utilized in transfer-printing because cobalt is the most stable of the coloring oxides, and the perfection of printing colors such as red, brown, and purple underglaze was not achieved until the late 1820s (Majewski and O'Brien 1987:119, 139).

The decoration on pearlware was often hand-painted underglaze, either in blue (often oriental motifs, and less frequently in floral patterns) or in polychrome floral and geometric patterns. While blue hand-painted pearlware was produced from the inception of the ware, polychrome hand-painting on pearlware did not occur until ca. 1795 (Noel Hume 1970:129).

White-colored earthenware was the result of the introduction of increasing amounts of cobalt into the cream-colored ceramic paste during the early-nineteenth century. The bodies of these ceramic vessels became thicker and coarser over time; the net effect of this whitening of the paste was a reduction in its plasticity. The result of these changes distinguishes white-colored earthenware from cream-colored earthenware. During the first quarter and into the second quarter of the nineteenth century, the white-colored earthenware body frequently was covered with a cobalt tinted glaze typical of pearlware. Ultimately, the use of cobalt additives in the glaze was reduced, and by the end of the first quarter of the nineteenth century, a white-colored earthenware paste with a clear glaze was being produced. This type commonly is referred to as whiteware.

Sherds transitional between pearlware and whiteware are often found. As was the case with pearlware, these ceramics were usually decorated. Decoration found on transitional white-colored earthenware includes techniques found on pearlware such as annular banding, finger-painting, shell-edging, polychrome hand-painting, blue hand-painting, and transfer-printing. The transfer-print palette was expanded ca. 1830 to include colors such as red, green, brown, and purple. Spatter (or sometimes called sponged) decoration also is found. Introduced in the 1820s, the earliest spatter decoration was produced by spattering paint from a full brush on the vessel using a stencil. Reserved areas were often

hand-painted (Ray 1974:211-212; Majewski and O'Brien 1987:161-162).

Whiteware also received a wide variety of decoration. Transfer-printing in a variety of colors is the most common decorative treatment found on whiteware. In addition, a variation on transfer-printing, flow blue, is often recovered. This decoration was produced by the deliberate introduction of a chlorinated vapor into the kiln, which blurred the transfer-print. Patterns on later examples tend to be more distinct than those on earlier pieces. Introduced ca. 1825, Flow Blue was utilized on whiteware and ironstone (below) into the early-twentieth century. Flow purple and flow brown were also produced in lesser quantities (Ray 1974:69).

Other decoration seen on whiteware includes annular, mocha, finger-painting, shell-edging, blue and green edging, blue hand-painting, polychrome hand-painting, and spatter. Stamped decoration, in which a cut sponge was used to apply pigment to the vessel (Ray 1974:212), also is found in contexts post-dating 1845 (Majewski and O'Brien 1987:161).

Another white-colored earthenware popularized during the mid-nineteenth century in America and England was variously referred to as ironstone, stone china, and white granite. This type also has a refined white-colored earthenware paste. Worthy (1982:335-337) classifies it as a white stoneware, yet states that the body is "almost vitreous." Since stonewares by definition are vitrified, this precludes the classification of ironstone as a stoneware.

It should be noted that Worthy (1982) is correct in stating that whitewares are easily distinguished from later ironstones. Unfortunately, distinctions between the two types at mid-century are less clear. While it seems that sufficient differences exist between whiteware and ironstone in terms of paste composition, permeability, body thickness, decoration, and surface color to justify their segregation, it is equally clear that these differences form a continuum between the two types, just as pearlware gradually grades into whiteware. Barber (1902:19) states that the formula for ironstone is similar to that used in all white ceramic wares, namely flint, feldspar, kaolin, and ball clay.

As stated above, ironstone was developed in England ca. 1850, and was produced in the United States at a slightly later date (Ramsey 1947:153). Miller (1991:10)

has indicated that it was being imported to the United States by the 1840s. It has a hard white, and often thick and heavy ceramic body. It is semivitreous, whereas whiteware is nonvitreous. Ironstone fractures evenly and smoothly. The surface appearance is hard and smooth, usually with an opaque-looking glaze with a blue-gray cast. It is frequently undecorated, or decorated with only molded relief. However, transfer-printing is not uncommon, particularly on late-nineteenth- and early-twentieth-century examples. Decorative motifs usually consist of floral patterns, unlike the primarily scenic transfer-prints found until the mid-nineteenth century on pearlware and whiteware. Decalcomania is also common after ca. 1900. In addition, ironstone is sometime found with gilt decoration.

Heavy-bodied ironstone declined in popularity at the end of the nineteenth century in favor of lighter-weight, usually decorated, semivitreous wares. However, the heavy-bodied ware was still readily available at least as late as 1895 (Majewski and O'Brien 1987:123-124). A comprehensive discussion of the complexities of nineteenth-century white-bodied ceramic production is beyond the scope of this study, and the reader is referred to Majewski and O'Brien (1987) for further information. However, in an effort to refine the late-nineteenth-century ceramic chronology, three separate categories of ironstone are identified herein: "classic" ironstone, ironstone, and "modern" ironstone. Classic ironstone is defined as having a thick, heavy body and a blue-gray cast. The date range of 1850 to 1900 is tentatively proposed for this category; it is anticipated that data from closely-dated contexts will refine the upper end of this range. The category ironstone encompasses the terminal-nineteenth/early-twentieth-century, thinner and lighter semivitreous wares as well as sherds deriving from thin sections of classic ironstone vessels. Thus, it is something of a catch-all category, and has a tentative date range from 1850 to at least 1920. "Modern" ironstone will be used to identify all semi-vitreous wares distinctly modern in appearance; these are tentatively dated to post-1930. Of course, individual sherds with decorations that date them more precisely than these broad ranges are treated accordingly.

Yellow-colored earthenware is an American coarse utilitarian body type. The paste in fact consists of stoneware, not earthenware clays, but the ware is classified as an earthenware because it is not fired to

vitrification. The paste ranges from soft and porous in low-fired examples to nearly vitrified pieces which have been fired at high temperatures. The paste color is buff to brownish yellow, and varies with the amounts and types of impurities in the clays and with the firing temperature. Surface treatment of the vessels varied with function. The variant known as yellowware is covered with a clear glaze. It was molded into a variety of utilitarian forms such as bowls, jelly-molds, pitchers, and mugs. After 1840, it is frequently found with annular bands in white, brown, and blue, as well as mocha decoration in blue or brown (Ramsey 1947:148-150). Yellowware was produced into the twentieth century.

Yellow-colored earthenware also is found with a tortoiseshell brown glaze produced by mixing manganese and iron oxides into the glaze. Known as rockinghamware, the type was molded into a variety of decorative and utilitarian shapes. Dates of manufacture were between ca. 1830-1900, but the height of rockinghamware's popularity was the mid-nineteenth century.

Yellow-colored earthenware sometimes was covered with an Albany slip, or a similar dense, brown-to-black matte slip glaze. This variant was more commonly known as brownware, and was most often utilized for straight-sided crocks and storage vessels. Generally wheel-thrown, brownware was produced between ca. 1830 and 1900. Brownware is occasionally unglazed. This variant was manufactured ca. 1840-1875 (Ramsey 1947:144). Bristol glazes, which utilize zinc oxide as their primary fluxing agent, also are found on brownware. The Bristol glaze is opaque, off-white, and frequently exhibits pits and pinholes (Rhodes 1973:180). Bristol-glazed brownwares generally occur in late-nineteenth/early twentieth century contexts.

Another variant of yellow-colored earthenware is late spatter. Also referred to as "late sponged," it was manufactured in the late-nineteenth and early-twentieth centuries. Produced for utilitarian purposes, late spatter consisted of blue sponged decoration on an opaque white (Bristol glaze) or opaque light blue ground (Ray 1974:114).

A final type which is not actually a yellow-colored earthenware but is discussed here for the sake of convenience is English majolica. It has a coarse, cream- to buff-colored earthenware body which is covered with bright, opaque or semi-transparent, multi-colored

glazes. The glazes disguised the coarse ceramic bodies, which were molded into a variety of shapes. Introduced by Minton of Stoke-on-Trent at the 1851 Great Exhibition, it was later manufactured by Wedgwood and by George Jones and Sons in England as well as at a number of American potteries.

A number of different refined red-colored earthenware types were manufactured in England from the eighteenth into the nineteenth century. The pastes are fine-textured, thin, compact, and generally hard-fired. The pastes show a rich reddish-brown through clear lead glazes. These distinctive wares are rarely found in southeastern Louisiana collections.

Refined redwares with annular decoration, although rare, are common relative to other refined redwares. Some examples clearly imitate pearlware; the interiors are slipped white and the glaze is tinted blue with cobalt. This type appears to date to the nineteenth century. It has been recovered from nineteenth-century contexts at Chalmette Battlefield (16SB147) (Yakubik 1990), and at Algiers Point (Goodwin, Yakubik, and Gendel 1984) as well as from the nineteenth-century Smith-Pierite burials (Brain 1988: Figure 48p). Barbeau (1941) reports that this type was manufactured during the mid-nineteenth century in Canada.

Stoneware pastes range in color from white-gray or buff to deep gray and brown. Stoneware clay becomes vitreous between 1200-1300 degrees, and it has a smooth and stoney appearance (Rhodes 1973:22). The most common surface treatment of stoneware is salt glazing. The raw ceramic is fired until the clay matures, at which point salt is added to the firebox. The vaporized salt is then deposited on the ware, producing a thin, bright, hard glaze with an orange-peel texture (Rhodes 1973:285).

Stoneware was first commercially produced in the United States ca. 1775, and use of these heavy, gray or brown bodied, wheel thrown utilitarian vessels became widespread during the nineteenth century. Because the salt vapor did not adequately penetrate the interior of vessels, an Albany slip, developed ca. 1810, often coated the interior of American salt-glazed stonewares produced after this date. Salt-glazed stoneware is often undecorated, or decorated with cobalt or manganese hand-painting. The application of an engobe, or slip to change the surface color of a vessel prior to glazing was also common, as was exterior brown slip glazing.

The fact that stonewares were often produced in small local potteries contributes to the large amount of variation seen in these vessels.

"Porcelaneous stoneware" is a classificatory term suggested by Worthy (1982) to describe a type that embodies traits of both stoneware and porcelain. Although use of this term has been rejected by Majewski and O'Brien (1987:106), it seems appropriately descriptive. Also known as semi-porcelain and hotel china, it was developed in the United States after 1880 for table use. However, Majewski and O'Brien (1987:124) indicate that it may not have been used in the home until the twentieth century. It contains both kaolin and ball clay, and is fired between 1200-1400 degrees (Worthy 1982:337). It is very white, dense and completely vitrified, but unlike porcelain, is opaque.

Hard-paste porcelain is completely vitrified and translucent. It is made from kaolin and petunse (feldspar, or potassium aluminum silicate), and it approaches a glass in composition because of the high firing temperature (1300-1450° C.). The paste tends to fuse with the feldspathic glaze during firing. The ware fractures conchoidally. The surface appearance is hard and smooth, and the surface color ranges from very white to white with a gray, blue, or green cast (Miller and Stone 1970:81; Noel Hume 1970:257-263). Porcelain can receive a variety of surface treatments, although only cobalt decoration may be applied underglaze due to the heat necessary to mature the clay.

Soft-paste porcelain differs from hard-paste porcelain in the use of fluxing agents, such as ground glass frits or bone ash, to lower the firing temperature required to mature the clay. The color of soft-paste porcelain ranges from white to pale buff. While the paste is vitreous, it has a somewhat granular texture. There is a clear division between paste and glaze when viewed in cross-section, and it is somewhat less translucent than hard-paste.

Hard-paste porcelain was first manufactured by the Chinese in the eighth century (T'ang Dynasty). Chinese porcelain came into such demand that, by the eighteenth century, Oriental potters were manufacturing porcelain exclusively for export to western markets. Oriental porcelain is found in British colonial contexts as early as the first half of the seventeenth century (Noel Hume 1970:257). It is also recovered on French (Miller and

Stone 1970:81) and Spanish colonial period sites (Deagan 1987).

The first European hard-paste porcelain was produced at Meissen in 1709. Soft-paste porcelain manufacture began in France in the late-seventeenth century, and in 1769 hard-paste was first produced at Sevres. Soft-paste porcelain manufacture also began early in England at Bow, Chelsea, and Derby. In addition to the use of glass frits, bone ash was utilized as a flux in England as early as 1750. Spode is usually credited with perfecting and standardizing the English "bone china" formula ca. 1790. The discovery of kaolin deposits in Cornwall led to the founding of the Plymouth factory in 1768, which produced the first English hard-paste (Wynter 1972; Cotter 1968).

By the later-nineteenth century, relatively inexpensive porcelains were being mass produced for the American market by manufacturers such as Haviland and Company. Undecorated French porcelains provided competition for American and British ironstones during this period. Commercially successful hard-paste porcelains were not manufactured in the United States until ca. 1880.

Parian, an unglazed porcelain manufactured to imitate marble, was frequently utilized for vases and decorative pieces. It was produced by numerous American potteries during the second half of the nineteenth century.

In addition to the ceramics described above, a few sherds of utilitarian coarse earthenwares were recovered from excavations at 16OR130. These included Green-Glazed Redware, Flecked Lead-Glazed Redware, and Brown-Glazed Redware, all of which may be broadly dated to the eighteenth century. Of these, the former two are probably of French manufacture, while the source for the latter is unknown. Another French type, Mottled Green Lead-Glazed Redware, which probably predates 1780, was recovered from EU1.

In addition, a Middle Style Spanish Olive Jar fragment was collected; this type has been dated 1560 to 1800 by Deagan (1987:28) and 1580 to 1780 by Goggin (1960:17). Lead-Glazed Pink Earthenware was also found. This type corresponds closely to descriptions of the Spanish type El Morro ware (Deagan 1976:92-94, 1987:50-51; Smith 1962:69). El Morro ware has been dated to the period 1550 to 1770, but it occurs as late as the early-

nineteenth century in southeastern Louisiana (Yakubik 1990:231).

Coarse earthenwares such as these are most commonly found in eighteenth-century contexts in Louisiana, although they are present in low frequencies in contexts as late as 1835 (Yakubik 1990:196). Primarily continental European in manufacture, coarsewares and French faience were the primary ceramics utilized in southeastern Louisiana prior to ca. 1780. Type descriptions and further information on the coarsewares mentioned above are presented in Yakubik (1990:220-263).

Classification of Glass. All glass recovered from Holy Cross was sorted by color. Whole bottles and diagnostic fragments were described by presumed function and/or shape (Wilson 1981:110; Haskell 1981:Figure 32; Baugher-Perlin 1982) wherever possible. Variations in lip finishes were also described (New Orleans Antique Bottle Club 1981:iv). Manufacturing attributes present on individual bottle and bottle fragments were listed. A summary chronology of changes in bottle manufacture is presented below. Selected bottles are illustrated in Figures 26, 27, and 28.

Prior to the nineteenth century, the majority of glassware was hand-blown. Characteristics of hand-blown glass include the absence of mold seams and an asymmetrical vessel shape. Alternately, bottles were blown into a one piece dip-mold to form the vessel body, while the neck and shoulders were hand finished. This technique came into use during the later eighteenth century and continued to be utilized until the mid-nineteenth century.

Both hand-blown and molded bottles were held by pontil during finishing. Attached to the vessel base, pontils left characteristic scars. One variant is the blow pipe pontil. The blow pipe pontil exhibits a rough ring of glass; it is produced by utilizing the blow pipe as the pontil rod. Thus, the molten glass from the neck creates the characteristic scar on the base. The rough pontil, by contrast, has a circular rather than ring-shape scar of glass. Sand-tipped pontil scars are rough and often exhibit sand adhering to the vessel base. They are the result of covering the glass-tipped rod with sand (Jones 1971). In addition, the bare-iron pontil was in use during the period of 1845 to 1880. The scar resulting from this technique is smooth with an iron-oxide residue. The snap case, which held the bottle by its body, was introduced ca. 1857. It replaced the



Figure 26. Bottles from Excavation Unit 4.

- A. Philadelphia oval bottle
- B. pomade/morphine bottle
- C. ball neck panel bottle
- D. conical ink bottle
- E. fluted extract bottle



Figure 27. Bottles from Excavation Unit 4.

- A. Union oval bottle
- B. round ink bottle
- C. culinary bottle
- D. rye sample bottle
- E. Worcester sauce bottle, club sauce shape

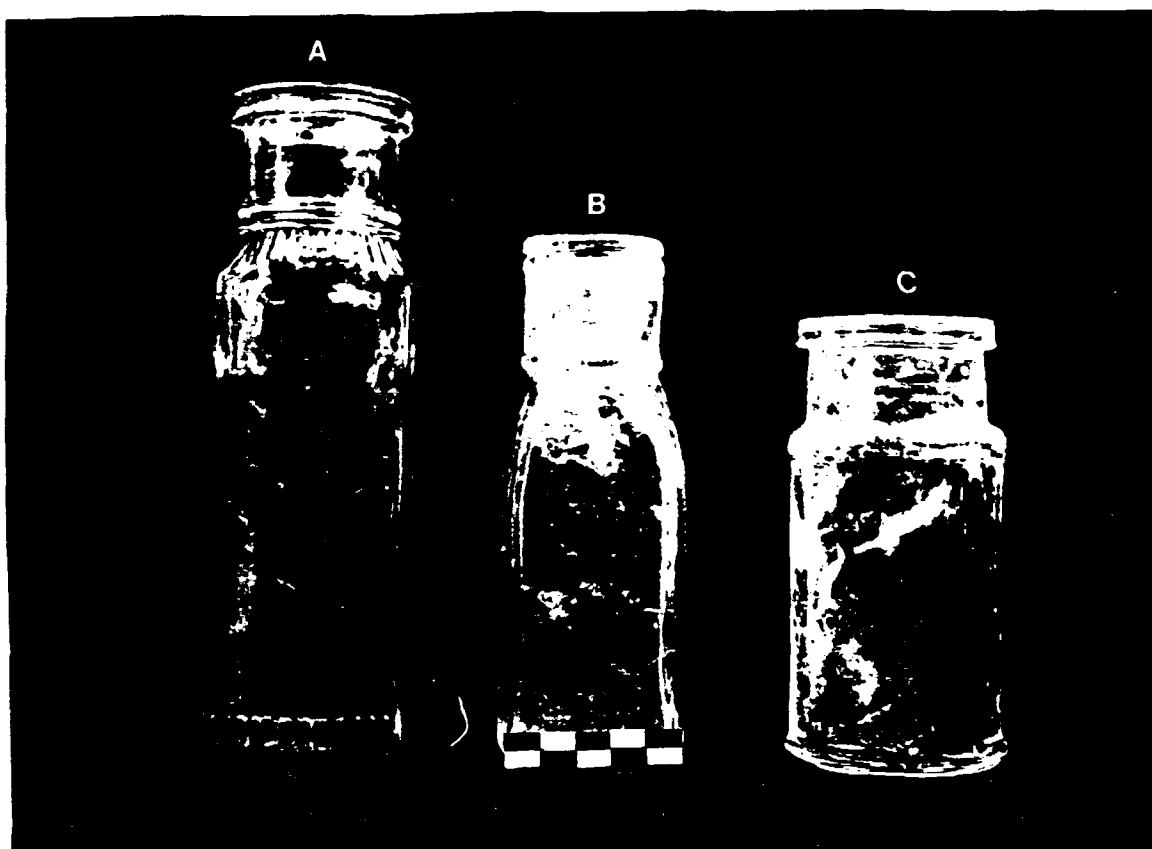


Figure 28. Bottles from Excavation Unit 4.

- A. culinary bottle
- B. American square pickle bottle
- C. possible mucilage/glue bottle

bare-iron pontil in most glass houses by the 1870s (Baugher-Perlin 1982:267).

Molds to shape the shoulders and the necks of vessels as well as the body came into general use during the 1810s and 1820s. These included the three-piece hinged mold, which had a dip body and a hinged, two-piece upper section to form the shoulders and the neck. The two-piece hinged mold came into use during the same time period in the United States. These molds were hinged at the base, and the resultant bottle had mold seams running across the base and up the sides of the vessel. Frequently, the base seam was obliterated by the scar from the pontil used to hold the vessel while the mouth and neck were finished (Baugher-Perlin 1982:263; Haskell 1981:29)

Two-piece molds began to replace three-piece molds by the mid-1840s, and by the following decade two piece molds were improved by the addition of cup bottoms and post bottoms to form the base (Haskell 1981:62; Lorraine 1968:40). Cup bottoms are characterized by a mold seam which encircles the bottom of the vessel body. A post bottom has a circular seam on the base itself, and the side seams extend over the base edge to meet it.

During the eighteenth and nineteenth centuries, bottle lips were cut off with shears while the glass was still soft. These sheared lips are characterized by an abraded plain cylindrical top. Frequently a bead of glass was laid on the neck beneath the lip of the vessel. By the mid-nineteenth century, bottle lip finishing techniques had been improved. The tooled lip was one such method. The lipping tool consisted of a central piece placed within the bottle neck and an external arm, which, when rotated, shaped an even lip from the soft glass applied to the mouth of the vessel. Use of this technique tended to obliterate the neck seams of the vessel as a consequence of reheating and finishing.

Blow-back molds were introduced in the mid-nineteenth century for the purpose of producing complex finishes, such as threaded closures. The mold permitted the vessel to be easily broken from the blowpipe, which generally left a ragged top which had to be ground smooth. Bottles produced in such molds had seams which went to the top (Munsey 1970:40) or nearly to the top (Baugher-Perlin 1982:Figure 11.2C) of the vessel.

Turn molds were utilized, particularly for the manufacture of wine bottles, during the period from 1870 to the 1920s. The bottle was turned within the paste-coated mold, which obliterated the seams. The process tended to leave horizontal striations on the bottle (Baughner-Perlin 1982:265).

At the end of the nineteenth century, a variety of semi-automatic manufacturing processes were introduced. These all involved manual operations at some point along the manufacturing sequence (Toulouse 1971:528-542). Michael Owens patented a fully automatic bottle machine in 1903. This eliminated all hand labor from bottle manufacture. Suction was used to draw the molten glass into the mold, and the resulting bottles have ring seams around the base and side seams which extend over the lip. By the third decade of the nineteenth century, the vast majority of bottles were produced by this method.

Because blow-back molds also produce seams that extend to the top of the vessel, this attribute alone does not distinguish an automatically produced bottle. The presence of valve marks (indented circles on bases measuring 1.27 to 2.22 in diameter), suction machine cut-off scars (irregular, frequently feathered circular marks on the bottoms of Owens-machine-produced vessels), ghost seams, and one or more horizontal seams on the bottle top and neck are diagnostic, however (Munsey 1970:38-45, Baughner-Perlin 1982:265-266). Despite this, some bottles may be ambiguous; for example, beverage bottles generally were fire-polished to remove the horizontal seams which indicated automatic manufacture. For the purposes of this study, ambiguous bottles were assumed to be automatically produced when recovered in contexts containing other twentieth-century material (Munsey 1970:41). Only vessels with diagnostic attributes were utilized to determine termini post quem.

In addition to manufacturing techniques which produce datable attributes, certain glass colors provide some chronological information. For example, "opaque black" glass, which was utilized primarily for liquor bottles, was common throughout the eighteenth century and until the late nineteenth century. The glass is actually dark green, but the thickness of the vessel gives the impression that the glass is opaque black in reflecting light (Jones 1971:11).

Also, most clear glass prior to the Civil War was lead crystal. The introduction of improved lime glass in 1864 provided an inexpensive alternative (Haskell

1981:28). Consequently, clear glass is more common from the second half of the nineteenth century onward.

Finally, manganese oxide came into wider use as a decolorizing agent in the final third of the nineteenth century. Use of this oxide to clarify glass continued through World War I. Glass treated with manganese oxide tends to become amethyst colored when exposed to sunlight (Toulouse 1969:534).

Classification of Nails. Generally, nails are only broadly datable. Prior to 1790, all nails were hand wrought. A variety of different wrought nails were manufactured. These can be defined by the shape of their heads (i.e. rose-headed, t-headed, l-headed, and headless).

Between 1790 and the 1830s, early machine cut square nails came into general use. Machine cut square nails with wrought heads were manufactured between about 1790 and 1815, after which square cut nails with machine made heads appeared. This type, which continued to be manufactured until the 1830s, had somewhat irregular heads and a "wasted," rounded shank under the head. Square cut nails with machined heads that lacked the "wasting" characteristic of the above appeared ca. 1820 (Nelson 1963; Noel Hume 1970:252-254).

Additional nail attributes which provide chronological information include cut marks and the direction of the metal fibers in the nail shaft. Prior to 1820, the cutting of the nail shafts produced burrs on diagonal corners of the nail shaft. After this date, the burrs appear on adjacent nail corners. In addition, prior to ca. 1830, the metal fibers of the nail run horizontally to the shaft. After ca. 1830, they run vertically to the shaft. Wire nails were introduced ca. 1850, and they began to replace square cut nails by the third quarter of the nineteenth century (Nelson 1963; Noel Hume 1970:252-254).

Buttons. Buttons were sorted by composition and were classified utilizing the typology formulated by Coastal Environments, Inc., for buttons recovered in the New Orleans area (Castille et al. 1982:5/99-5/102; Thigpen 1986:D7-D16). Buttons that could not be classified according to previously established types were fully described.

Most of the buttons recovered were ceramic, and a plurality of these were four-holed buttons with convex

faces and backs, concave wells, and rounded sides (Type C-2, Castille et al. 1982:5/100). Manufacture of ceramic buttons was patented in Great Britain in 1840 but was not common in the United States until after 1860. Ceramic buttons are still manufactured (Castille et al. 1982:5/110).

Shell buttons were recovered, but most of these were fragmentary and impossible to type. Shell was utilized for buttons "for generations," but the United States industry originated ca. 1890 (Rose and Santeford 1987:41). Bone buttons were also collected at 16OR130. One-holed bone discs have been dated 1726 to 1865 (South 1964), while five-holed buttons having a center index hole to position the turning tool have been dated 1750 to 1865 (South 1964; Olsen 1963), and four holed buttons to the period 1800 to 1865 (South 1964). Despite these relatively early date ranges, bone buttons evidently were sold as late as the 1920s (Rose and Santeford 1987:41). However, it should be noted that all but one of the bone buttons recovered at Holy Cross were found in association with antebellum ceramics.

It should also be noted in this context that a number of shirt studs were collected. These were utilized at least into the 1920s (Rose and Santeford 1987:41).

Marbles and Dolls. Both ceramic and glass marbles were collected from excavations. Most of the ceramic marbles were "commies," or common earthenware marbles. These unglazed, earth-toned marbles were manufactured until the late-1920s. Some "chalkies," or kaolin marbles were also found. These were imported from Germany beginning in the 1890s (Carskadden and Gartley 1990:56).

Glass marbles were first produced in Germany for export in 1846. These marbles were hand-made. Hand-made glass marbles can be distinguished by irregular spots on opposite sides produced by the grinding down of the scars where the marble was cut from a glass rod (Randall 1971:104).

Machine-made marbles were introduced in 1901 and were being produced in quantity by 1905. Those produced until about 1926 display a single roughened spot resulting from cutting and grinding, while those produced after that date are indistinguishable from modern marbles (Randall 1971:105). Glass marbles from Holy Cross all appear to postdate 1926, but the

fragmentary nature of some of them makes this evaluation problematic. It should be noted that no glass marbles were recovered from contexts incompatible with a post-1926 date.

Doll fragments recovered at Holy Cross consisted primarily of glazed porcelain and uncolored bisque limbs and head fragments. Doll parts such as these generally were manufactured in Germany, rarely predate 1860, and most in fact postdate 1880. Ceramic doll limbs that were attached to cloth bodies were manufactured into the 1930s. Bisque doll parts from Japan are also common in the twentieth century, but these generally were tinted with flesh tones (Noel Hume 1970:317-18).

In addition, fragments of a slip-cast bisque doll were recovered from EU4 (below). This type of doll post-dates 1900. The doll formerly had divided legs; such dolls are believed to predate those with legs joined to the feet (Noel Hume 1970:319).

Pipes. It was intended that the typologies presented by Humphrey (1969) and McKenzie and Castille (1986) would be utilized for the classification of pipes recovered from Holy Cross. However, collected pipe bowl and stem fragments were disappointingly plain with the exception of one pipestem and one pipebowl from EU1 ext, Level 3. The pipebowl had roulette-impressed decoration below the rim and foliate decoration on the bowl body. One of the unusual pipes identified by McKenzie and Castille (1986:F6) had leaf decoration. The pipestem fragment may have been part of a fluted pipe since the portion of the stem widening into the bowl was fluted.

CHAPTER 9 RESULTS OF FIELD INVESTIGATIONS

Figures 29, 30, and 31 are selected photographic views that show the present character of the study area. This chapter presents the results of field investigations within that area. First, features located during shovel testing are discussed. Determination of the possible function of the individual features was based on field examination and comparison of shovel test location to former standing structure location utilizing CAD-generated overlays. Examples of these overlays are shown in Figures 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, and 42. The site plan map was included in a previous chapter as Figure 25.

Following discussion of the features, the artifact distributions in shovel tests on Square 122 (16OR130), on Square 189 (16OR131), and on Lot 1 of Square 232 (16OR134) are reviewed. Finally, the four excavation units are discussed individually. Further analysis of the artifacts from these excavation units is presented in Chapter 10. It should be noted that no historic features were encountered during shovel testing at 16OR132 and 16OR133.

Features Located During Shovel Testing, 16OR130 (Square 122)

Shovel testing was undertaken in the southern portion of Square 122 (Figure 25). Houses formerly located in this area were moved or destroyed between 1910 and 1920 during construction of the Industrial Canal. Historic maps indicate that one of the Jourdan Brickyard kilns and a portion of the brickyard quarters complex were located on this square.

Possible Destruction Debris. S30 E20: The test yielded large amounts of architectural debris as well as ceramics and glass. The test was located under what was formerly the rear porch of the house that stood at 4825 Chartres Street as shown on the 1896 and 1909 Sanborn maps (Figures 36 and 38). Thus the artifacts may represent refuse deposited under the house.

S35 E50: A concentration of large brick fragments was found at 20 to 30 cm below surface. The test was located along the north wall of what was formerly the house at 4833 Chartres, as shown on the 1909 Sanborn map (Figure 38).



Figure 29. View of Square 122 looking north from the Mississippi River levee. The site of the kiln is in the center of the photograph, and the site of the quarters complex is to the left of the photo.



Figure 30. View of Square 189 looking north from the Mississippi River levee. The Gemar lot on Square 232 is visible on the left of the photo.



Figure 31. View of the Gemar lot looking east from the IHNC levee. The rear of 820 and 824/826 Jourdan are visible on the left of the photo.

ROYAL ST.

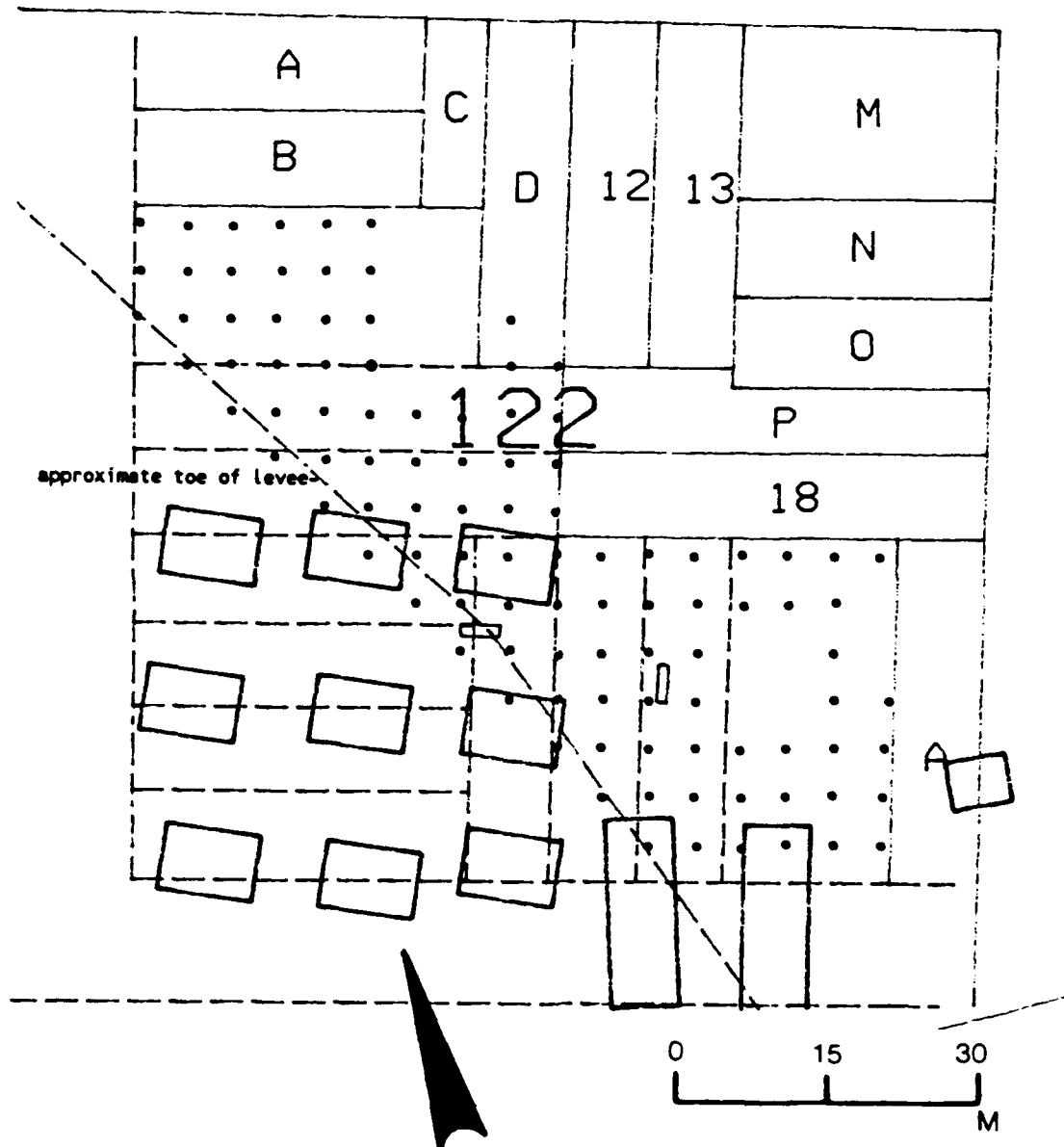


Figure 32. CAD-generated overlay of the Zimple 1834 map and the archeological excavations on Square 122.

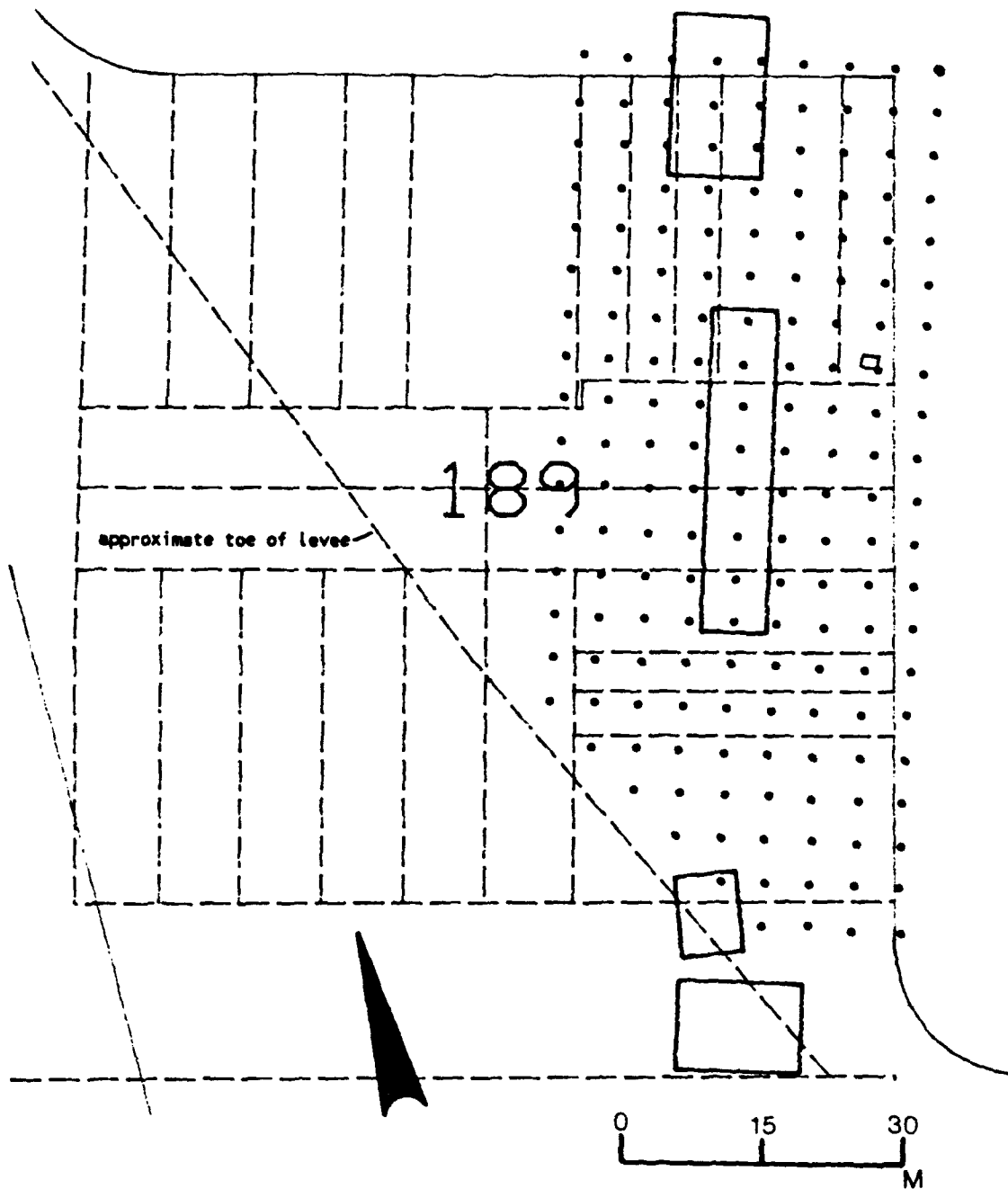


Figure 33. CAD-generated overlay of the Zimple 1834 map and the archeological excavations on Square 189.

ROYAL ST.

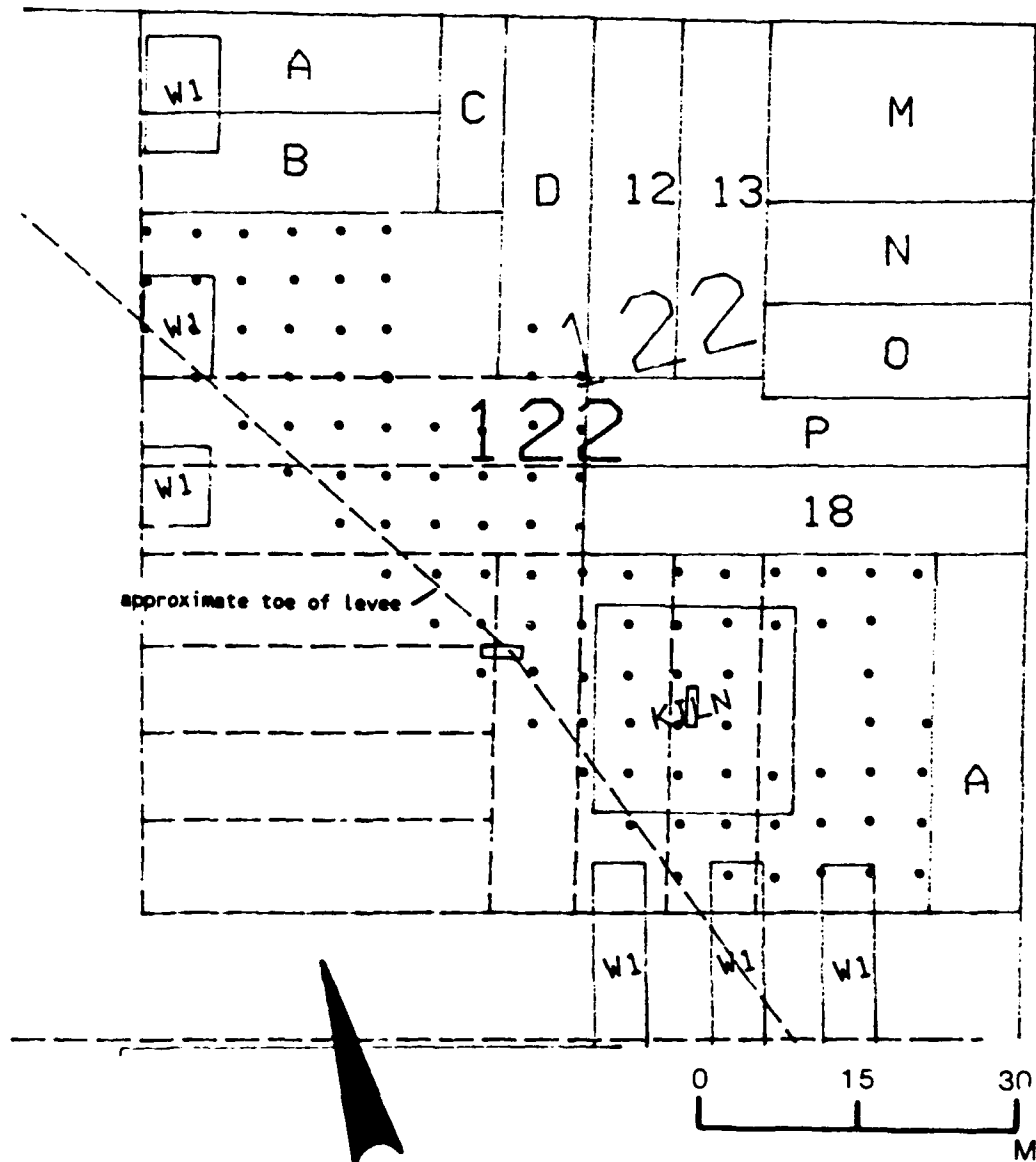


Figure 34. CAD-generated overlay of the Braun 1875 map and the archeological excavations on Square 122.

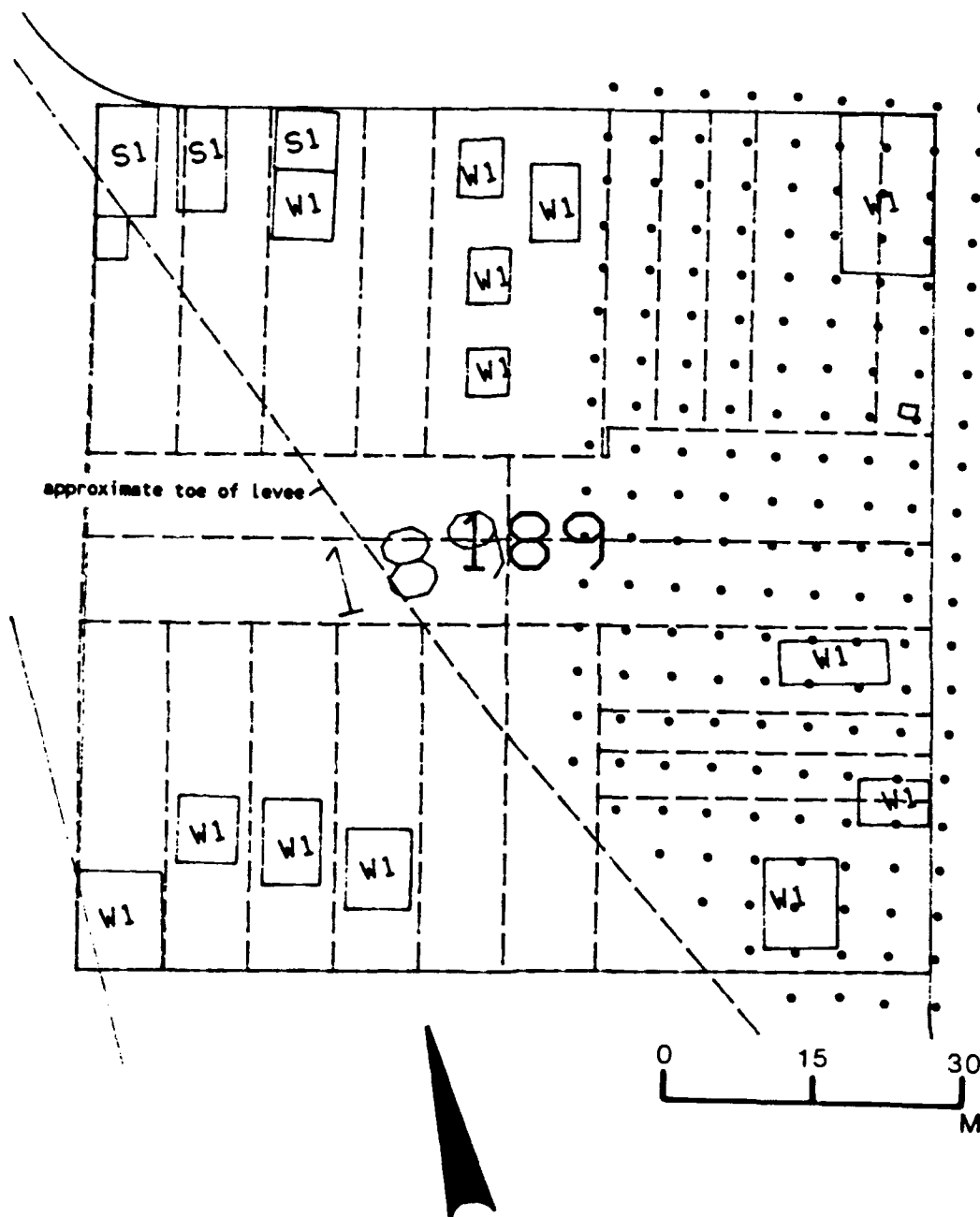


Figure 35. CAD-generated overlay of the Braun 1875 map and the archeological excavations on Square 189.

ROYAL ST.

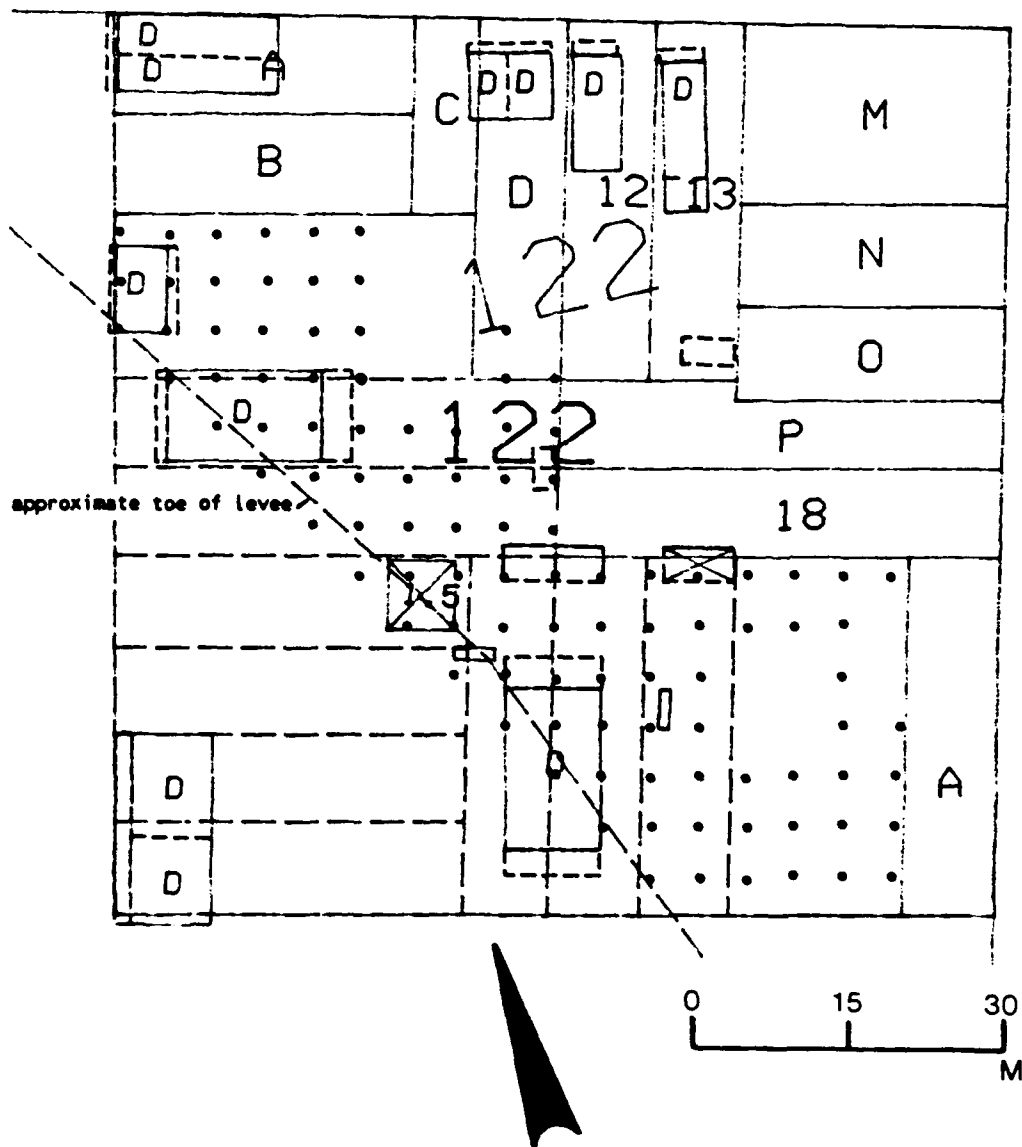


Figure 36. CAD-generated overlay of the Sanborn 1896 map and the archeological excavations on Square 122.

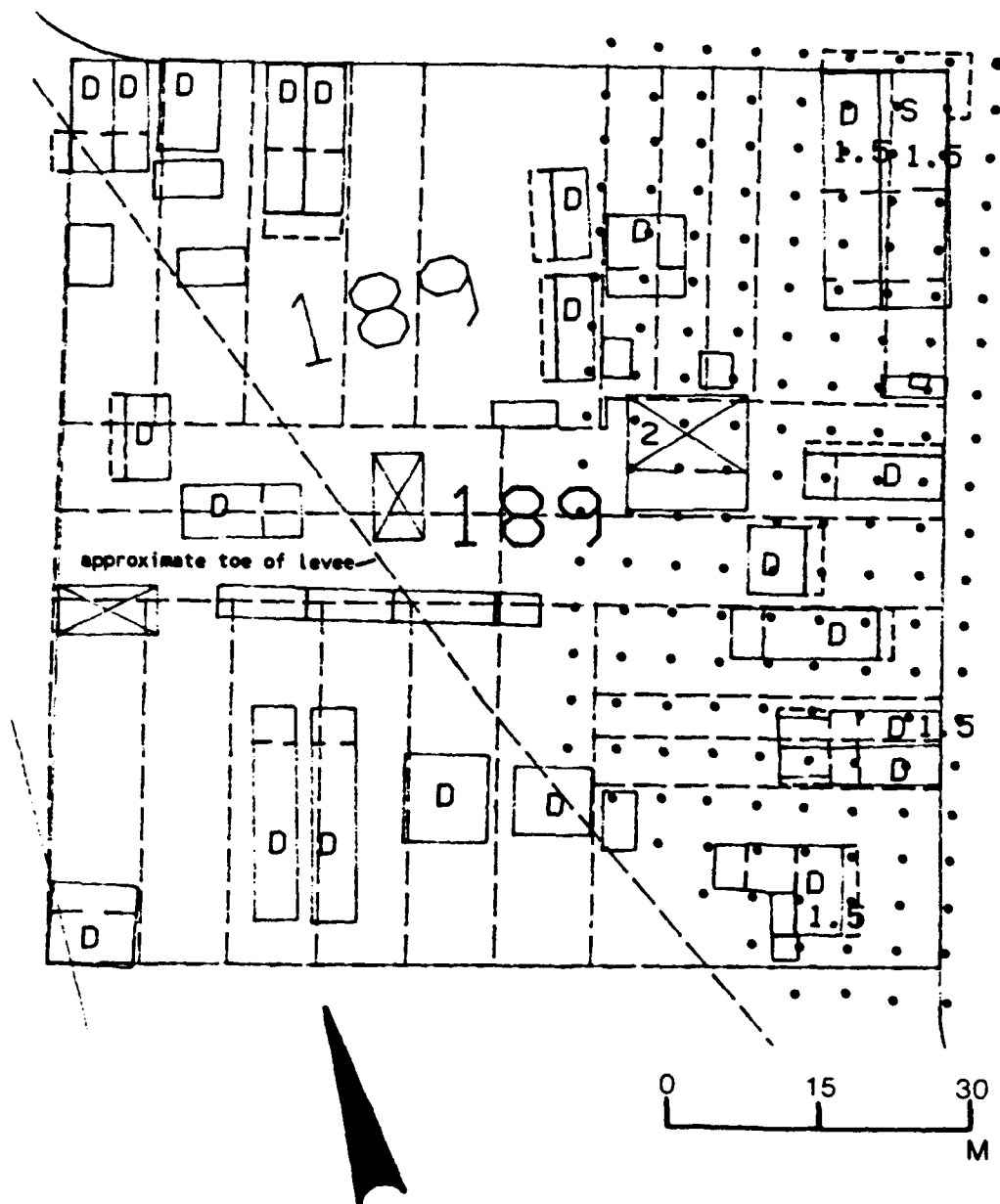


Figure 37. CAD-generated overlay of the Sanborn 1896 map and the archeological excavations on Square 189.

ROYAL ST.

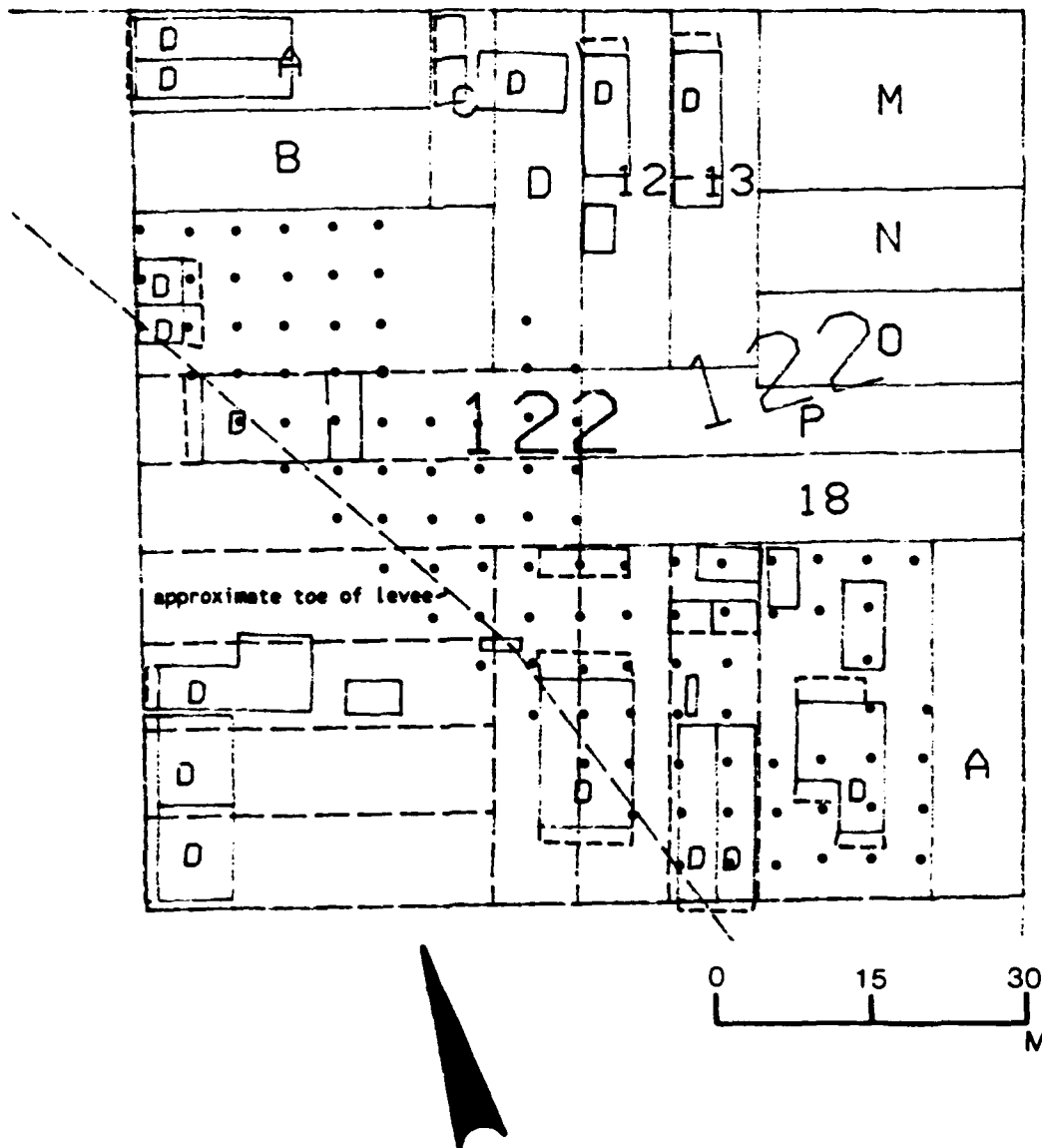


Figure 38. CAD-generated overlay of the Sanborn 1909 map and the archeological excavations on Square 122.

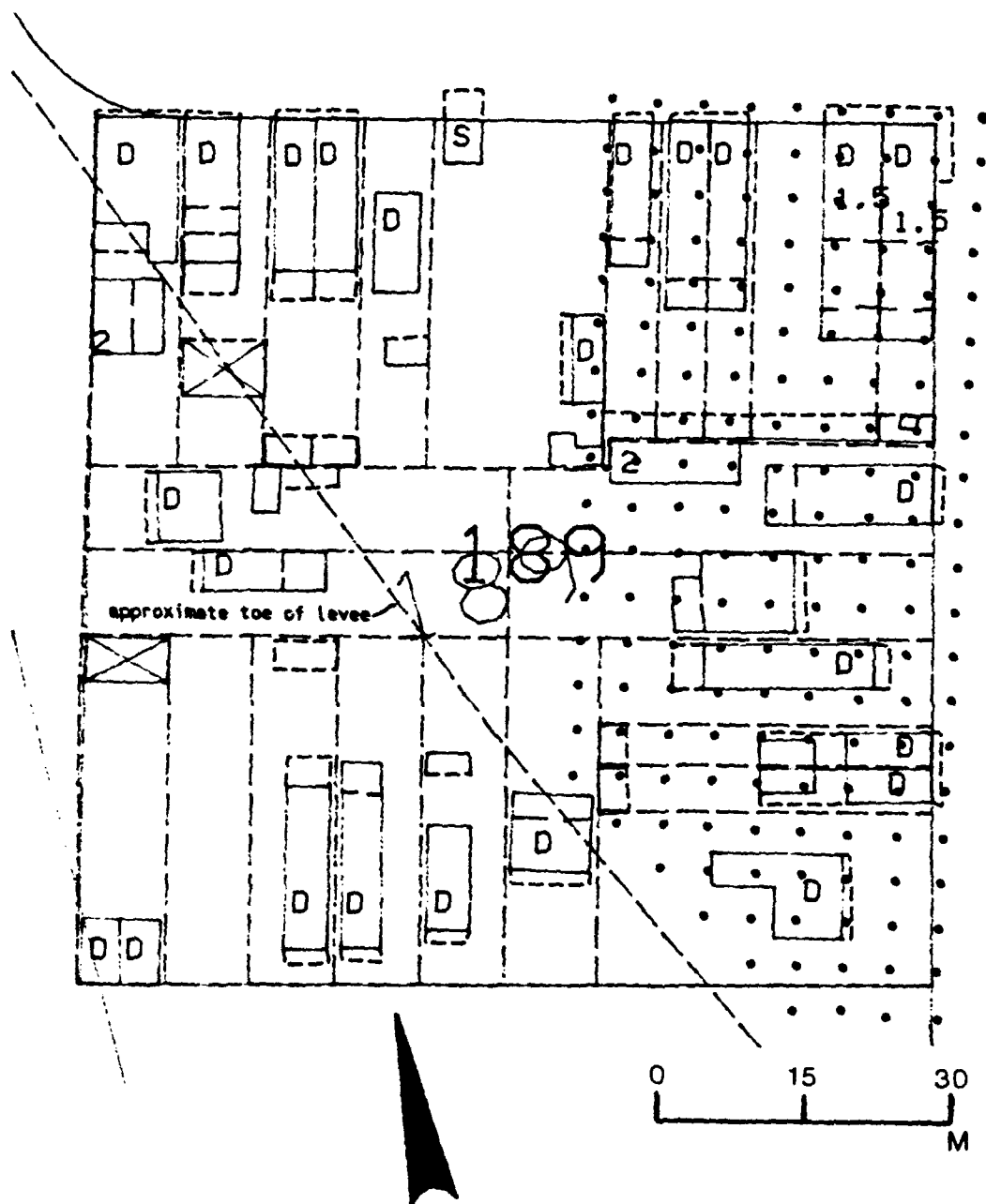


Figure 39. CAD-generated overlay of the Sanborn 1909 map and the archeological excavations on Square 189.

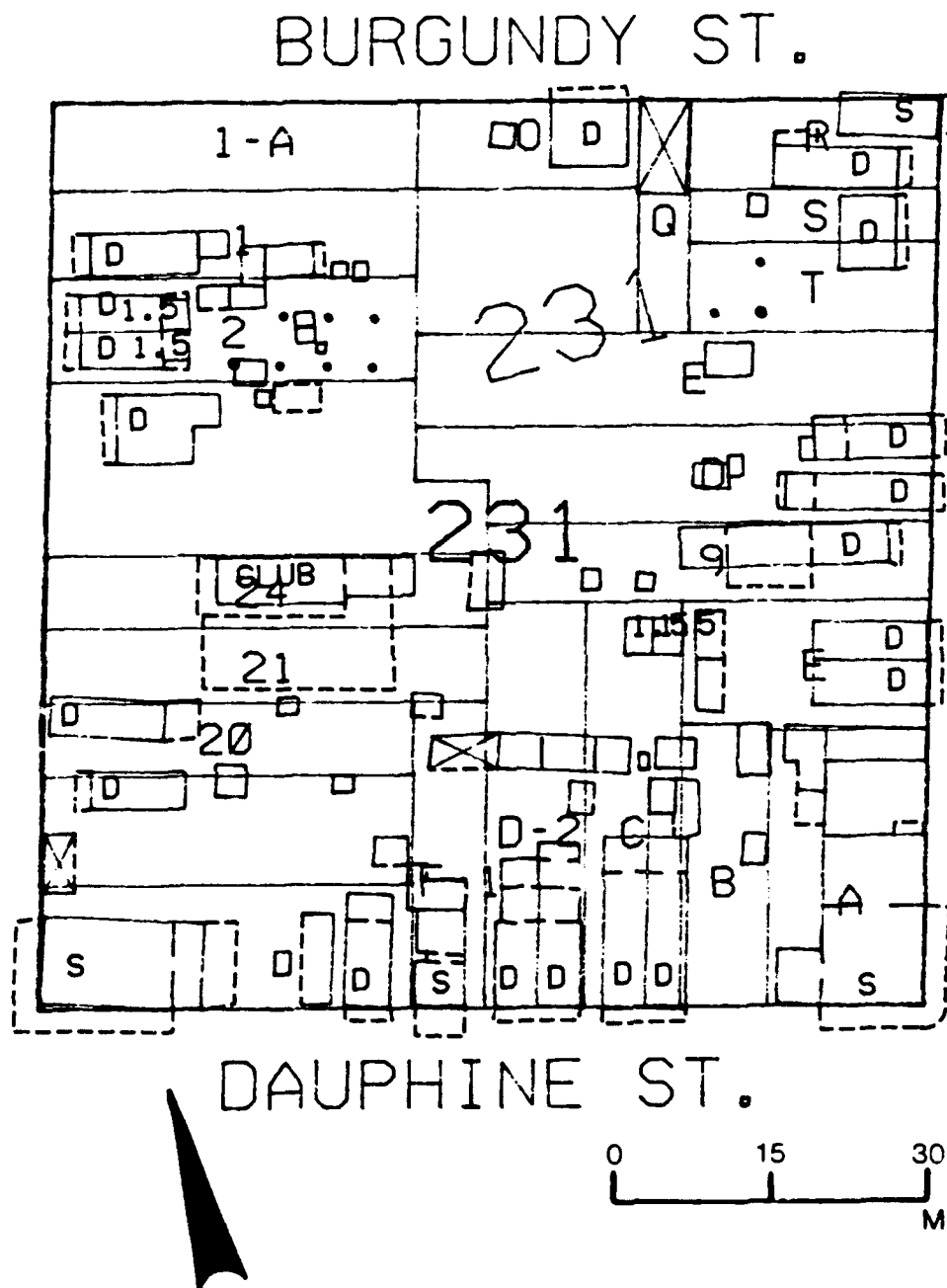


Figure 40. CAD-generated overlay of the Sanborn 1909 map and the archeological excavations on Square 231.

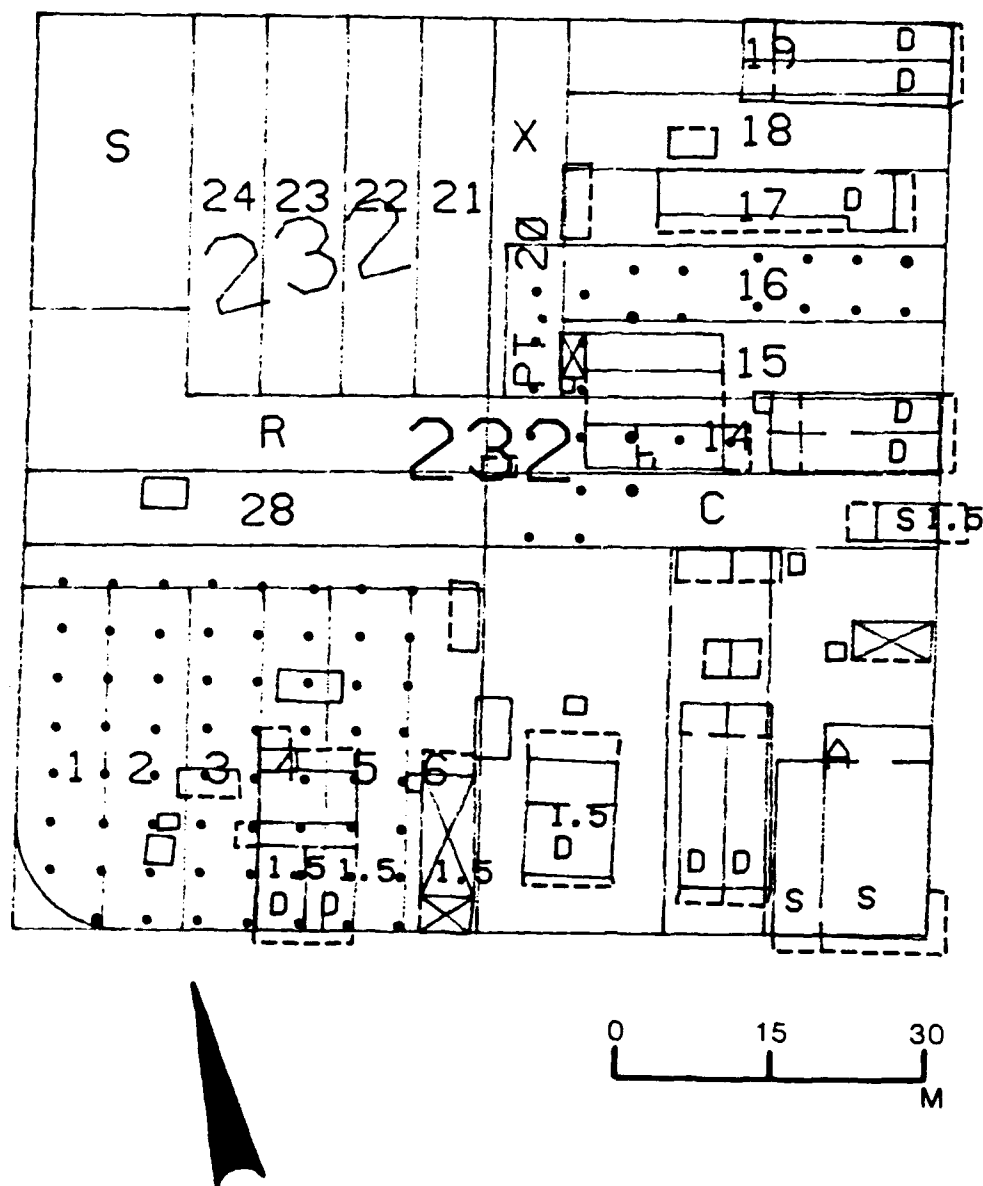


Figure 41. CAD-generated overlay of the Sanborn 1909 map and the archeological excavations on Square 232.

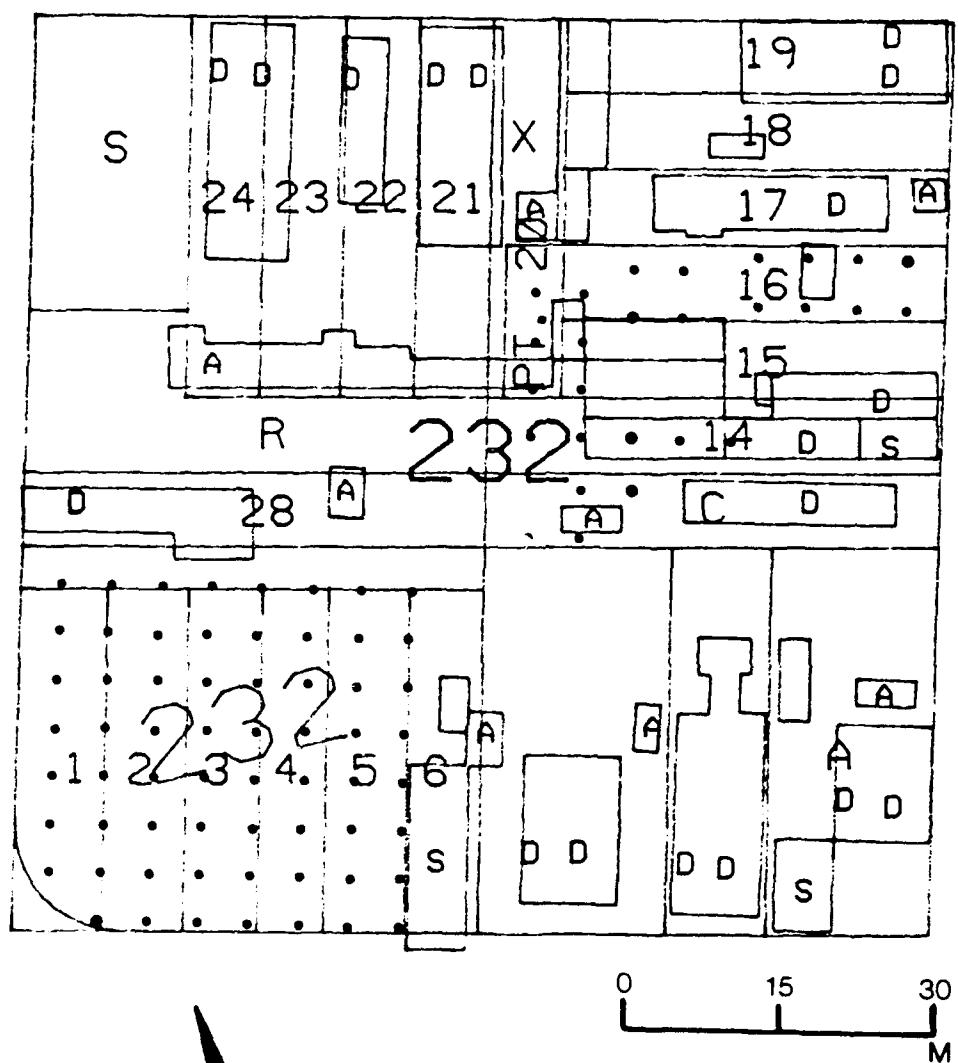


Figure 42. CAD-generated overlay of the Sanborn 1937 map and the archeological excavations on Square 232.

Possible Foundations. N5 W0: Two courses of laid brick were uncovered in the test. A third course was noted through probing within the test. Probing external to the shovel test was unsuccessful. The feature cannot be related to any structure on the historic maps.

S20 E40: Laid brick was found at 10 cm below surface; it appeared to be only one course deep. Probing revealed solid contact over an area measuring 40 cm north/south and 80 cm east/west. The test was located within what was formerly an outbuilding at 4833 Chartres as shown on the 1909 Sanborn map (Figure 38). The feature may have been a footing for the structure. Alternatively, it could have been part of the floor since it was only one course deep.

Possible Kiln Features. S25 E40: A layer of cinders and ash was found at 30 cm below surface. The deposit extended to at least 35 cm below surface. The test was located in the northeasternmost corner of the brick kiln as shown on the ca. 1875 Braun map (Figure 34) or immediately to the east of the kiln as shown on the 1869 subdivision plat (Figure 6).

S25 E20 and S35 E25: From 20 cm below surface to at least 35 cm, the 10YR 5/2 (grayish brown) clayey silt in the tests was mixed with brick, coal, and sandy mortar. Thus, the soil was quite disturbed in these areas. S25 E20 was located behind a house at 4825 Chartres on the 1896 and 1909 Sanborn maps (Figures 36 and 38), to the west of the Jourdan Brickyard kiln shown on the ca. 1875 Braun (Figure 34), and within the kiln shown on the 1869 subdivision plat (Figure 6). S35 E25 was located under the east wall of the house located at 4825 Chartres on the 1896 and 1909 Sanborn maps (Figure 36 and 38), and within the Jourdan Brickyard kiln shown on the ca. 1875 Braun and the 1869 subdivision plat (Figures 6 and 34). Thus, it seems most likely that these deposits are related to the kiln.

S30 E25, S30 E30, and S30 E35: Large brick fragments in a 10YR 5/2 (grayish brown) silt were found at about 20 cm below surface. These tests were located within the area formerly occupied by the kiln (Figures 6 and 34) while the test at E25 was also located at the east side of the porch of the house formerly at 4825 Chartres as shown on the 1896 and 1909 Sanborn maps (Figures 36 and 38). An oyster shell lens was present at 15 cm below surface in the test at E25. Since the house undoubtedly impacted the kiln, it seems likely that the shell is refuse related to the residence.

However, the brick fragments at slightly greater depths were probably associated with the kiln.

S35 E30 and S35 E35: Both tests revealed unusual stratigraphy. The top 15 cm were a 10YR 3/2 (very dark grayish brown) clay loam, while 15 to about 25 cm consisted of a 10YR 4/2 (dark grayish brown) clay loam containing brick fragments and charcoal. Below this to about 35 cm was a 5YR 4/6 (yellowish red) silt containing soft brick fragments of the same shade to about 35 cm below surface. A 7.5YR 3/2 (dark brown) silt extended to at least 40 cm below surface. The tests were located within the area formerly occupied by the brickyard kiln (Figures 6 and 34).

S45 E40: Laid brick was found at 20 cm below surface. Probing suggested that the north/south extent of the feature was confined to the test, but solid contact was noted for approximately 110 cm east of the test and 50 cm west of the test. This indicates that this may have been a chain wall foundation. The test was located immediately south of the south wall of the kiln as shown on the ca. 1875 Braun map (Figure 34).

Possible Privies. S20 E20: Four courses of laid brick were revealed in the south wall of the test. The north face of the brick was covered with plaster. Probing revealed solid contact to 1 m east of the test, to 60 cm west of the test, and to 30 cm south of the test. Probing to the north was unsuccessful. The test was located within what probably was the privy at the rear of 4825 Chartres according to the 1896 and 1909 Sanborn maps (Figures 36 and 38).

S20 E30: Laid brick was found in the test at 10 cm below surface. The three exposed bricks were all headers. Probing revealed solid contact for an extent approximately 75 cm east/west and possibly 1 m north/south. The test was located to the west side of a stable/outbuilding formerly at the rear of 4827/4829 Chartres on the 1896 and 1909 Sanborn maps (Figures 36 and 38). The configuration of the feature was very suggestive of a brick-lined privy.

S25 E35: A lens of slag and cinders was present between 17 to 27 cm below surface. While the test is located within the area formerly occupied by the kiln (Figures 6 and 34), it is also located where the probable privy for 4829 Chartres formerly stood as shown on the 1909 Sanborn (Figure 38). Since the privy shaft

would have impacted the kiln floor, the slag and cinders probably represent the cap to seal the privy.

Possible Refuse Deposits. N10 W0: Densely packed oyster shell was present from 5 to 25 cm below surface. Maps do not indicate that any structure formerly stood here.

S25 E50: A layer of oyster shell, bone, and large brick fragments were found at about 20 to 35 cm below surface. The test is located within an outbuilding shown on the 1909 Sanborn at 4822 Chartres (Figure 38).

Possible Sidewalks, Walkways, Patios. S30 E15: An oyster shell lens was noted in the test at about 10 cm below surface. This may be contiguous with the oyster shell lens found in EU1 ext (below). If so, the feature may represent a walkway or a paving located to the rear of the house formerly at 4825 Chartres (Figures 36 and 38). Alternatively, it may represent refuse thrown under the house.

Unidentified Features. S10 E10: Gray slate was found laid flat in the test between 10 and 15 cm below surface. The test was located to the rear of the house that formerly stood at 671 Jourdan Avenue (Figures 36 and 38).

S25 E55: A thin layer of slate is found at 5 cm below surface. Also in the test was a lens of crushed brick which extended from 20 to 25 cm and a layer of oyster and *Rangia* shell at 30 cm below surface.

S15 E10, S15 E15, and S15 E20: Gravel, brick, nails, some slag, and some shell were found in the tests at 10 cm below surface. Some of the gravel is mortared together in the tests at E15 and E20, and the latter test had a lens of slag and cinders below the gravel. The tests at E10 and at E20 both included sherds of pearlware. The tests are located to the north of the northeasternmost cabin shown on the 1834 Zimpel map (Figure 32).

Features Located During Shovel Testing, 16OR131 (Square 189)

Shovel testing was undertaken in the eastern half (the Jourdan Avenue side) of Square 189. Houses formerly located on the square were moved or destroyed between 1910 and 1920 during construction of the Industrial Canal. The 1834 Zimpel map indicates that

structures related to the Jourdan estate were located on this square.

Possible Destruction Debris. S15 W5: Impenetrable brick, slate, and mortar rubble were found at 17 cm below surface. The shovel test was located at what was formerly the east wall of the house at 4734/4736 Dauphine as shown on the 1896 and 1909 Sanborn maps (Figures 37 and 39).

S15 W40: At 16 cm below surface, slate was found laid flat in the northern half of the test. The southern half was filled with an impenetrable jumble of large brick fragments. The shovel test was located at what was formerly the west side of the house at 4726 Dauphine as shown on the 1909 Sanborn (Figure 39). The same impenetrable lens of large brick and concrete fragments was found in S15 W35, which would have been located at the east side of the same house.

S50 W25: A lens of crushed brick was noted between 20 and 25 cm below surface. The test was located along the north side of the house at 718 Jourdan Avenue as shown on the 1909 Sanborn map (Figure 39).

S70 W5: A lens of brick and mortar was noted at 10 cm below surface. The test was located along the north wall of the house formerly at 708/710 Jourdan Avenue as shown on the 1896 and 1909 Sanborn maps (Figures 37 and 39).

S85 W15, S90 W15, and S95 W15: Architectural rubble lenses in all three tests probably derive from the destruction of the house at 704 Jourdan Avenue. This residence is shown on the ca. 1875 Braun map, the 1896 and the 1909 Sanborn maps (Figures 35, 37, and 39). All three tests were located under the former location of the house at this address. Large fragments of soft orange bricks were found at 22 cm below surface in S85 W15 and at 33 cm below surface in S95 W15. In S90 W15, the soft orange brick was found along with gravel and shell.

Possible Foundations. S20 W20: Laid brick was found at 20 cm below surface. Probing revealed solid contact at a depth of 20 cm to a distance of 60 cm west of the test, at which point there was solid contact at 30 cm below surface. This suggests the feature was a stepped footing. Probing to the north, east, and south was unsuccessful because of a *Rangia* lens which overlies the feature at 10 cm below surface. The feature was

located between what were formerly the houses at 4730 and 4734/4736 Dauphine (Figure 39). Thus the feature cannot be related to any late-nineteenth/early-twentieth-century mapped structure. However, it may be associated with one of the structures located on the square in 1834 (Figure 33). No diagnostic artifacts were recovered from the test.

S25 W10: Laid brick was found at 10 cm below surface. The feature could not be successfully probed due to the presence of subsurface rubble. The shovel test was located at what was formerly the rear center of the house/store at 4734/4736 Dauphine as shown on the 1896 and 1909 Sanborn maps (Figures 37 and 39). This may have been part of a footing or pier for this structure.

S35 W10: The southeast corner of a stepped footing was revealed by the test. Probing indicated that the footing measured approximately 90 cm N/S and 40 cm E/W. The upper course was located at 10 cm below surface, and the lower course, which was stepped out 5 cm, was located at 25 cm below surface. The test was located on the west side of a privy to the rear of 4736 Dauphine as shown on the 1896 and 1909 Sanborn maps (Figures 37 and 39). This footing, along with the footing found in EU4 (below), may have supported the privy superstructure. There is no evidence for any other structure in this location.

Possible Privies. S35 W15, S35 W20, S35 W25, and S35 W40: All four tests revealed lenses of shell, coal, and brick at depths ranging from 5 to 30 cm below surface. The tests were located along a line of probable privies at the rear of the yards of the properties fronting on Dauphine as shown on the 1909 Sanborn map (Figure 39). Following the excavation of EU4 (below), it became apparent that this rubble was the cap to seal the privies following their abandonment.

Possible Refuse Deposits. S5 W5: An oyster shell lens that measured 9 to 20 cm below surface was recovered. The shovel test was located immediately under the house/store that formerly was at the corner of Jourdan and Dauphine, as shown on the ca. 1875 Braun map, the 1896 and the 1909 Sanborn maps (Figures 35, 37, and 39). Alternatively, this may have been a sidewalk beside the house.

S65 W30: A thin lens of coal was found at 20 cm below surface. The test was adjacent to the south side

of the house at 714 Jourdan Avenue shown on the 1909 Sanborn (Figure 39), and to the rear of the house at this address shown on the 1896 Sanborn and the ca. 1875 Braun (Figures 35 and 37). It may represent a coal tip.

Possible Sidewalks, Walkways, Patios. S5 E0: Impenetrable architectural rubble was found at 20 cm below surface. The rubble consisted primarily of brick and cement. The shovel test location was within the city easement along Jourdan Avenue.

S5 W20: A *Rangia* lens was found between 13 and 17 cm below surface. The underlying soil was more clayey than noted in other shovel tests. The shovel test was located beside the house/store which was formerly at 4734/4736 Dauphine (Figures 37 and 39).

S15 W20, S15 W25, and S15 W30: All three tests revealed a lens of impenetrable gravel and *Rangia* at approximately 15 cm below surface. The tests at W25 and W30 are located in an area that was formerly beneath the house at 4728/4730 Dauphine (Figure 39), so this feature (if it is in fact a continuous lens) probably predates the ca. 1909 construction of the house. It should be noted that the three tests were located adjacent to the south wall of a cabin shown on the 1834 Zimpel map (Figure 33). However, no diagnostic antebellum artifacts were recovered from these tests.

S25 W15: A *Rangia* lens was found at 15 cm below surface. The lens was impenetrable by 20 cm below surface. The shovel test was located at the rear of what was formerly the house at 4734 Dauphine (Figures 37 and 39).

S30 W10: A *Rangia* lens was noted between 13 and 20 cm depth in the north wall of the shovel test. The test was located in the rear yard of 4734/4736 Dauphine, between the house and the privy (Figures 37 and 39).

S50 W5, S50 W10, and S50 W15: A lens of cinders and slag was noted in the tests between 10 and 29 cm below surface. The tests were located in what was formerly the front yard of 718 Jourdan Avenue (Figure 39), adjacent to the property boundary with 728 Jourdan Avenue.

S50 W35: Two laid bricks were found in the southwest corner of the unit at 10 cm below surface. The feature was only one course deep. The bricks were overlain by shell, precluding probing. The test was

located where a stable is shown on the 1896 Sanborn map (Figure 37). Because the feature was only one course deep, it may have been a paved floor.

S80 W10 and S80 W15: A gravel concentration was found in the north half of the test at S80 W10 at 15 cm below surface. The second test revealed a gravel, coal, and crushed brick lens at 20 to 25 cm below surface. The tests were located in what was the north side yard of 704 Jourdan Avenue (Figures 35, 37, and 39). The tests were also directly behind a structure mapped on the ca. 1875 Braun (Figure 35).

S85 E0 and S90 E0: Concentrations of slag and cinders were found between 10 and 20 cm below surface in these tests. The tests were located within the city easement along Jourdan Avenue.

Miscellaneous Features. N0 W5: A benchmark set in concrete was located at 7 cm below surface.

S60 W30: A plastic bag containing the bones of a dog were found.

S70 W15: A drainage pipe was uncovered at 24 cm below surface. It probably was related to the house at 708/710 Jourdan Avenue (Figures 37 and 39).

Unidentified Features. N0 W10: A concrete block measuring 10 cm width and 10 cm height was found at 30 cm below surface. The length of the feature could not be probed because of impenetrable debris below the surface. The shovel test was located within the city easement along Dauphine.

S25 W20: Possible laid brick fragments were found at 15 cm below surface. Probing revealed solid contact to 70 cm to the west of the shovel test and to 50 cm to the north of the shovel test, but probing to the east and south were unsuccessful. The feature was located between what were formerly the houses at 4730 and 4734/4736 Dauphine (Figure 39). Thus the feature could not be related to any mapped structure. However, it may have been associated with the possible foundation in S20 W20. Both of these features may be related to the buildings located on this square in 1834 (Figure 5). A sherd of classic ironstone was recovered from the test.

S30 W20: Impenetrable brick and shell rubble were encountered at 20 cm below surface. The test was located where a structure is shown on the 1834 Zimpel

map (Figure 33). No diagnostic artifacts were recovered from the test, however.

S40 W40: An oyster shell lens was present between 15-25 cm below surface in the test. The test was located within what was formerly an L-shaped outbuilding at the rear of the 4716 Dauphine lot (Figure 39). The oyster shell may have served as the floor for the outbuilding. Alternatively, it may have been the cap for a privy.

S70 W25 and S70 W30: Both tests were inundated at the time of excavation. Flat, impenetrable objects were noted at 15 cm and 30 cm below surface, respectively. The tests were located in the rear yard of what was formerly 708/710 Jourdan Avenue, between the house and the probable privy (Figures 37 and 39).

S100 E0: A lens of soft orange brick, Rangia, and mortar was noted at 20 cm below surface. Associated with the feature was a sherd of blue shell-edged whiteware. It should be noted that structures shown on the 1834 Zimpel were located in the vicinity of this test (Figure 33).

Features Located During Shovel Testing, 16OR134 (Square 232)

Square 232 was divided into five lots to simplify laying in the grids for shovel testing (Figure 25). Lot 1, at the corner of Jourdan and Sister, was a portion of a German immigrant family's truck farm from at least 1880 to 1910. Lot 2, at 820 Jourdan, was the location of a meat market in at least 1899 and 1900. Lots 3 through 5, all at 824/826 Jourdan, were the location of the home and the bakery of a German family from 1900 through World War II (Mr. August J. Riemer, personal communication to Yakubik, 1991).

Possible Destruction Debris. Lot 5, N0 E0: A lens of crushed brick was found between 10 and 15 cm below surface. The test was located where the Riemer bakery formerly stood according to the 1909 and 1937 Sanborn maps (Figures 41 and 42).

Possible Foundations. Lot 1, N10 E10: Two planks of wood were uncovered in the test at 17 cm below surface. The first of these may only have been a fragment, and it extended into the wall. The second was upright in the test, and it extended to at least 50 cm below surface. The test was located at the southeast

corner of a structure shown on this lot on the ca. 1875 Braun map (Figure 13).

Lot 5, NO E5: Laid brick was encountered at 14 cm below surface. The brick was at least 3 courses deep; two were uncovered in the shovel test and one was felt by probing. Probing also suggested an irregular, hard surface extended to the north and the east of the test. The test was located where the Riemer bakery formerly stood according to the 1909 and 1937 Sanborn maps (Figures 41 and 42).

Possible Sidewalks, Walkways, Patios. Lot 4, NO W0: A sandstone-like dressed stone set in tan sand was found at 20 cm below surface. This may have been a walkway in the 4824 Jourdan Avenue yard, since no mapped structures are shown in this location.

Miscellaneous Features. Lot 1, N5 E30, N10 E30, N15 E30, and N35 E30: These tests were located on an elevated area in the easternmost portion of the lot. Gravel, brick, sand, cinders, and shell were found in these tests. This area is at the same elevation as the adjacent yard, so this material probably represents fill.

Lot 1, N20 E30: A flagstone was found in the test at 7 cm below surface.

Lot 1, N30 E0: Concrete was found in the test immediately below the topsoil.

Lot 3, NO E5: An iron fragment covered the bottom of the test at 20 cm below surface.

Unidentified Features. Lot 4, NO W15: A lens of cinders and coal was found at 30 cm below surface. No historic structures are mapped in this area.

Artifact Distribution in the Shovel Tests

The frequency distributions of artifacts in shovel tests at 16OR130, 16OR131, and Lot 1 of 16OR134 were examined to determine if any patterns could be identified utilizing SURFER. SURFER is a computer program which produces two and three dimensional graphics from data collected within a grid. Although developed to translate survey data into topographic maps and surface plots, it can be utilized to illustrate the distribution of artifacts across a site. Seven categories of artifacts were examined: all ceramics,

antebellum ceramics, container and table glass, architectural glass (pane and lamp glass), nails, architectural glass and nails in combination, and bone (both by frequency and by weight). Both "topographical" maps and surface plots were generated for each of these. These were then compared to CAD-generated overlays of the historic maps and the field map. The resulting plots which appear to exhibit non-random distributions are presented below.

One of the purposes of the systematic shovel testing regimen was to determine if there were any concentrations of antebellum material in the vicinity of the former Jourdan Brickyard. Figures 43 and 44 present the distribution of antebellum ceramics at 16OR130 (Square 122). There were two major concentrations on this square. The first of these was in the vicinity of S5 E0. This area was directly north of the brickyard cabin as mapped by Zimpel in 1834 (Figure 5). The second and larger concentration was in the vicinity of S35 E15. According to the Zimpel map, this was the northeastern corner of the brickyard cabin complex, and a structure was located here. In addition, the small concentration at S45 E45 is also interesting. The Zimpel map indicates that a structure was located immediately to the east of this concentration. Thus, the distribution of antebellum ceramics at 16OR130 agrees with the layout of habitation areas as illustrated by the Zimpel map.

The 1834 Zimpel map shows structural improvements on what would later become Square 189 (16OR131). The surface plot of the distribution of antebellum ceramics at 16OR131 demonstrates that the location of former structural improvements and artifact density are also correlated on this square, but not as exactly as was the case at 16OR130. The frequencies of antebellum ceramics in individual shovel tests were lower here than at 16OR130; no shovel test included more than 3 antebellum sherds. Figure 45 illustrates that these ceramics were for the most part absent from the tests closest to Jourdan Avenue. Similarly, the structures shown on Zimpel were set back relative to the present-day street. Figure 45 also shows that the ceramics were concentrated in the southern half of the square. Zimpel, however, indicates that the structures extended north beyond Dauphine Street. It is possible that these structures were not in fact residential.

The distribution of all ceramics at 16OR130 appears to suggest a pattern of adjacent secondary refuse

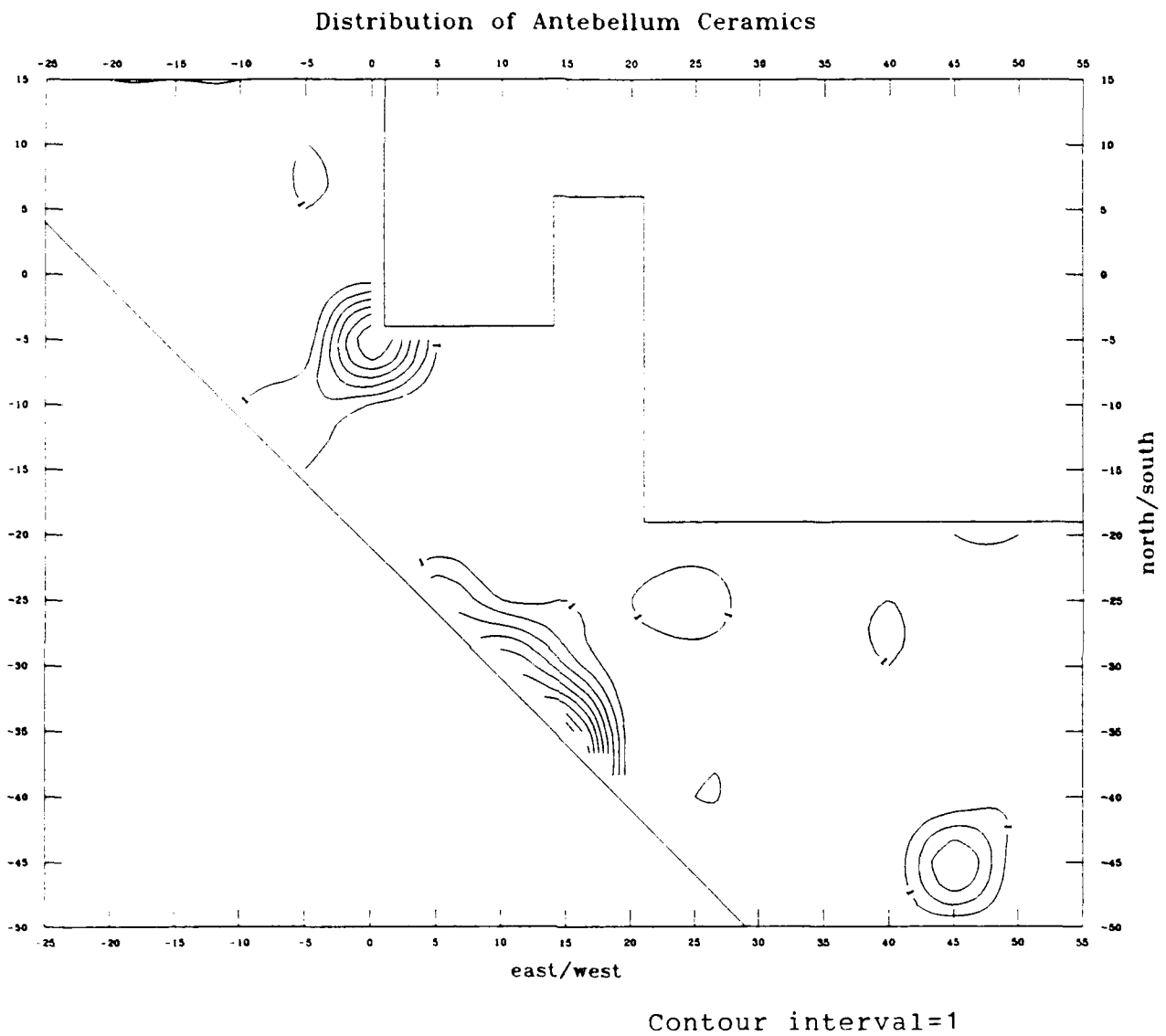


Figure 43. Map of the distribution of antebellum ceramics in shovel tests at 16OR130.

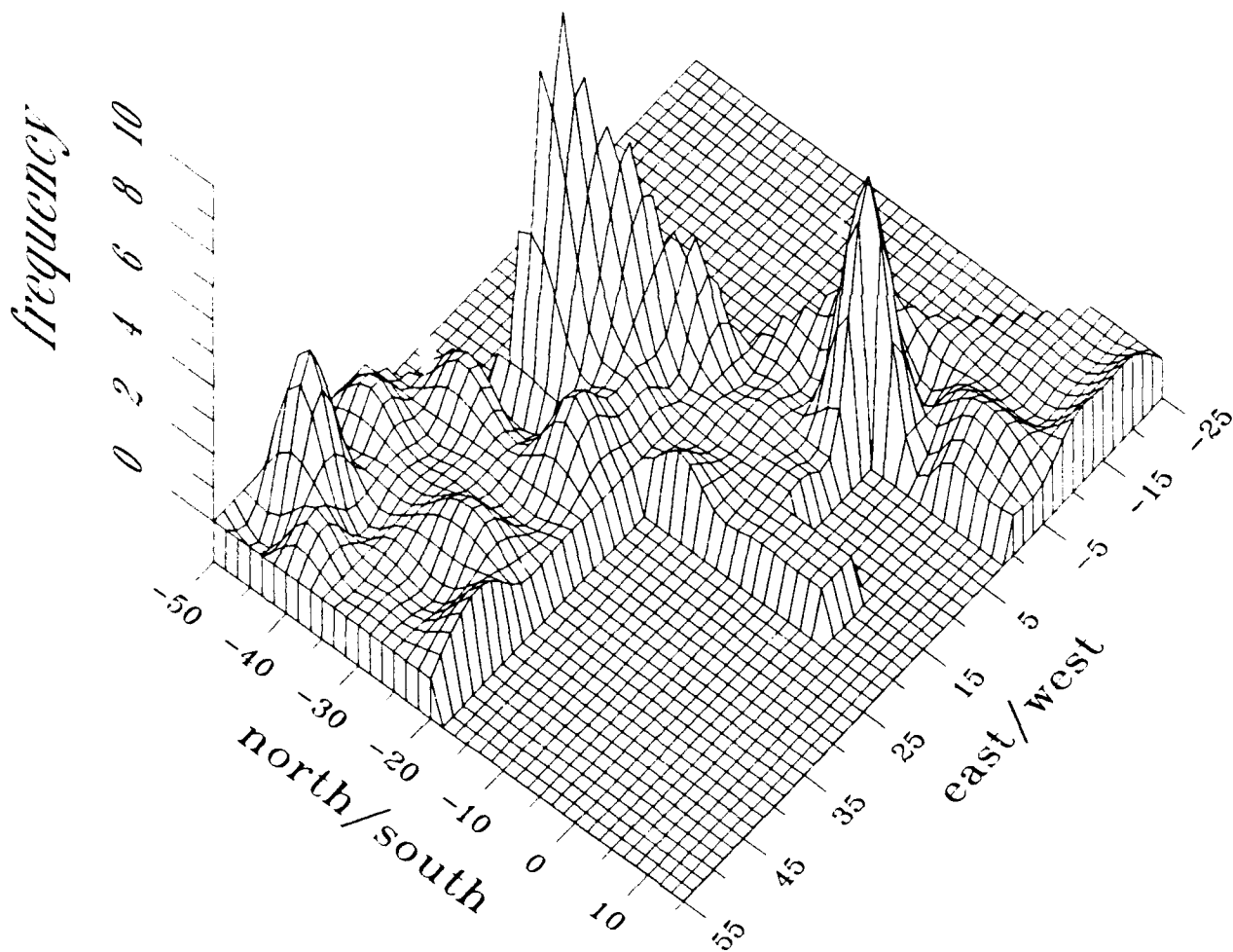


Figure 4 4. Surface plot of the distribution of antebellum ceramics in shovel tests at 16OR130.

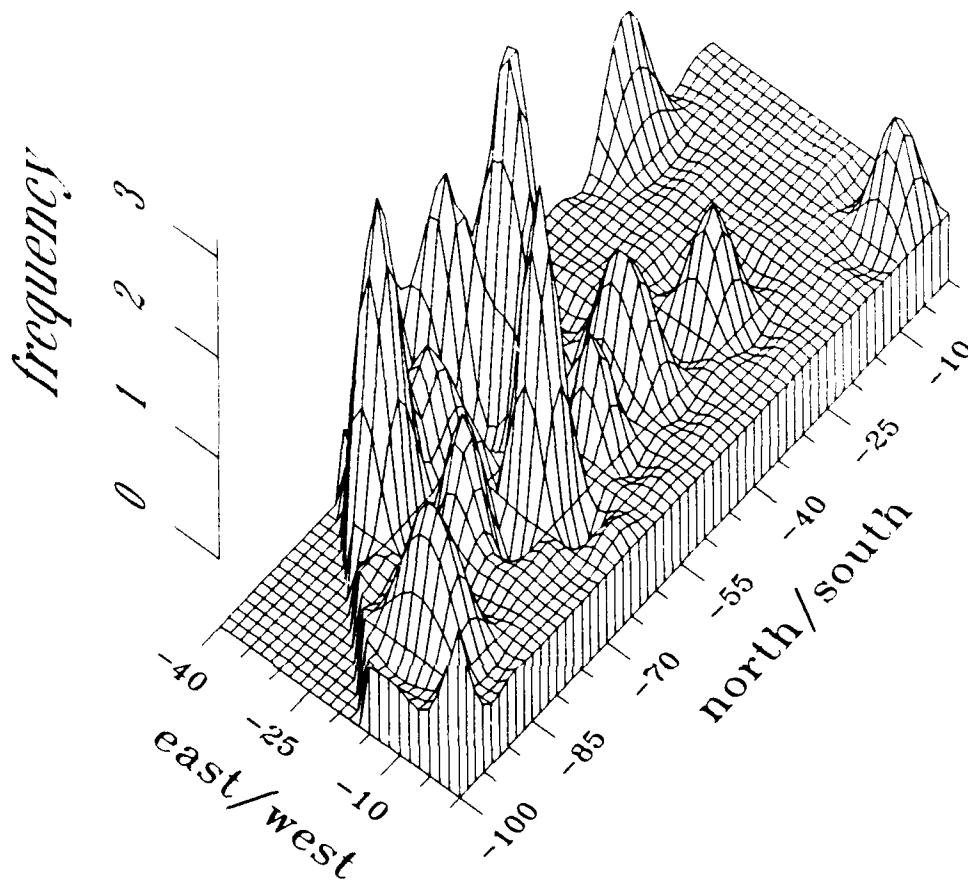


Figure 45. Surface plot of the distribution of antebellum ceramics in shovel tests at 16OR131.

disposal. Figure 46 shows that there are three major concentrations of ceramics: S5 E0, S30 E20, and S35 E35. These tests are located immediately to the rear of 671 Jourdan, 4825 Chartres, and 4827/4829 Chartres, respectively. In addition, this pattern appears to hold true for container and table glass, which also showed concentrations at S30 E20 and S35 E35 (Figure 47). A third concentration of container and table glass was located along the E20 line. This may be related to the use of outbuildings shown on the 1896 and 1937 Sanborn maps in this area (Figures 14 and 22).

By contrast, concentrations of bone at 16OR130 appears for the most part to lie at a greater distance from the residential structures (Figures 48 and 49). The two areas with the highest frequencies of bone were located at or adjacent to mapped historic outbuildings (Figures 14 and 17). This still holds true when the distribution by weight rather than count is examined (Figure 49). The one major exception to this pattern in Figure 49 is the concentration in the vicinity of the S10 line. Interestingly, this concentration corresponds to the rear yard of 671 Jourdan Avenue.

The distributions of ceramics and container and table glass at Lot 1 of 16OR134 also suggest adjacent secondary refuse disposal. Figures 50 and 51 show that ceramics and container and table glass are concentrated immediately to the east and to the north of the location of the former residential structures (cf. Figures 7, 13, and 21). By contrast, bone (by weight) is concentrated immediately to the west and to the north of the house, with the highest concentration located adjacent to an outbuilding formerly located off the eastern boundary of the tested property (Figure 52).

The pattern seen on Squares 122 and 232 suggests that in addition to the use of trash pits and privies for waste disposal, the practice of depositing refuse directly outside of the house was still practiced in this semi-rural neighborhood during the late-nineteenth/early-twentieth century. However, bone appears to have been treated differently, and was primarily deposited away from living areas. This seems to indicate a distinction was made by the inhabitants between "clean" garbage and that which would have attracted insects and vermin.

This pattern is less dramatic at 16OR131, although ceramic concentrations do tend to occur at the rear, or in the case of the properties fronting on Jourdan

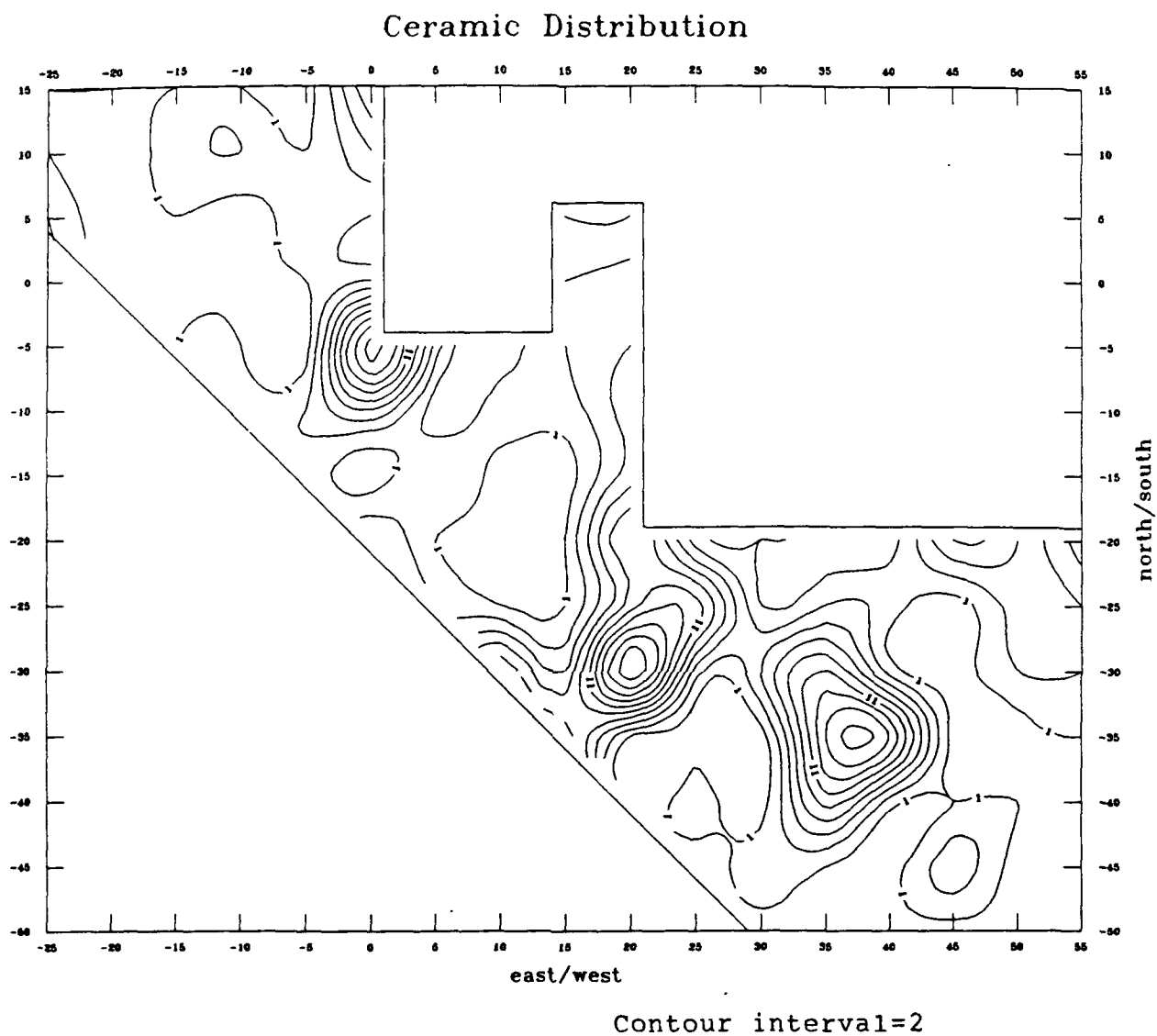
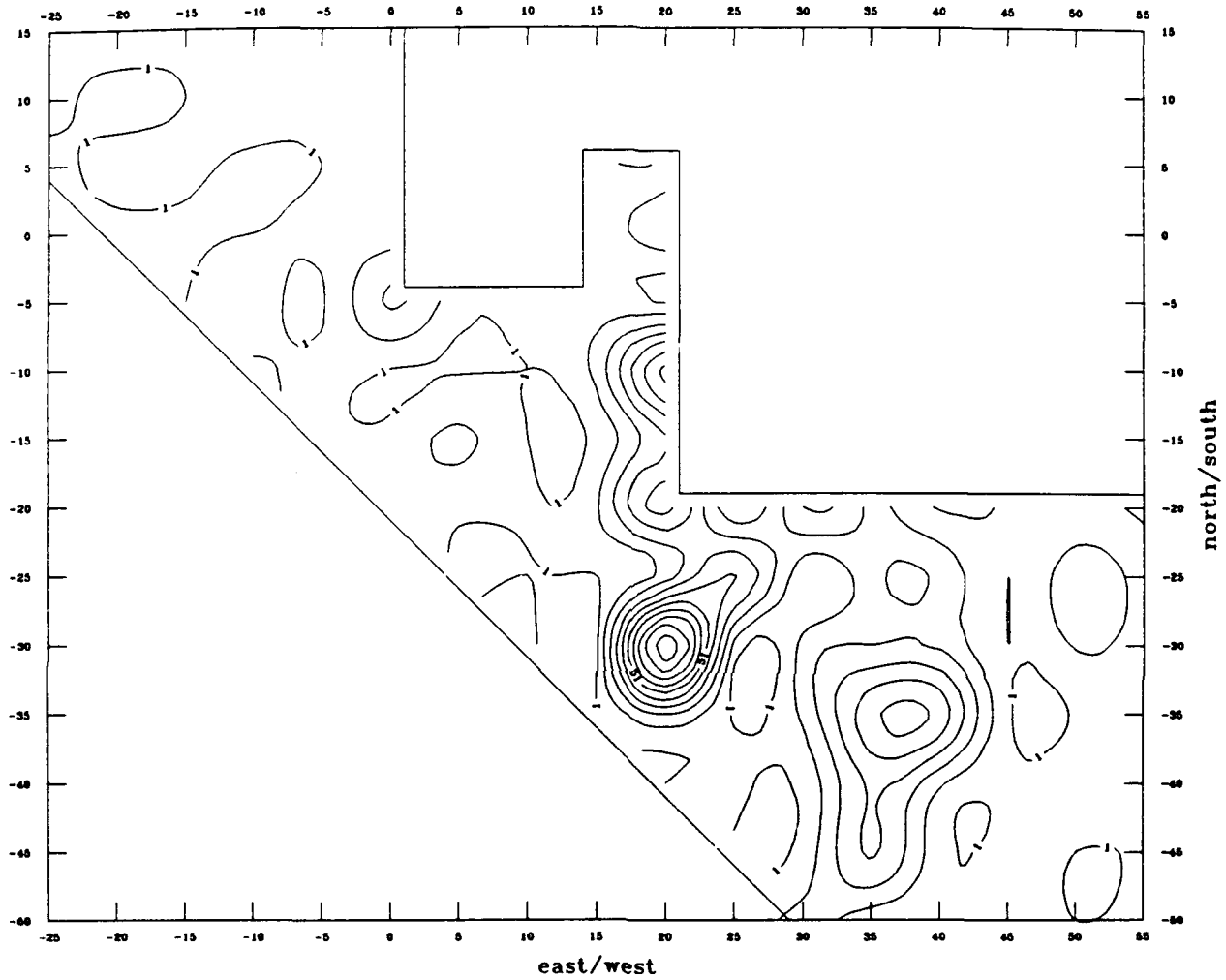


Figure 46. Map of the distribution of ceramics in shovel tests at 160R130.

Container and Table Glass Distribution



Contour interval=10

Figure 47. Map of the distribution of container and table glass in shovel tests at 16OR130.

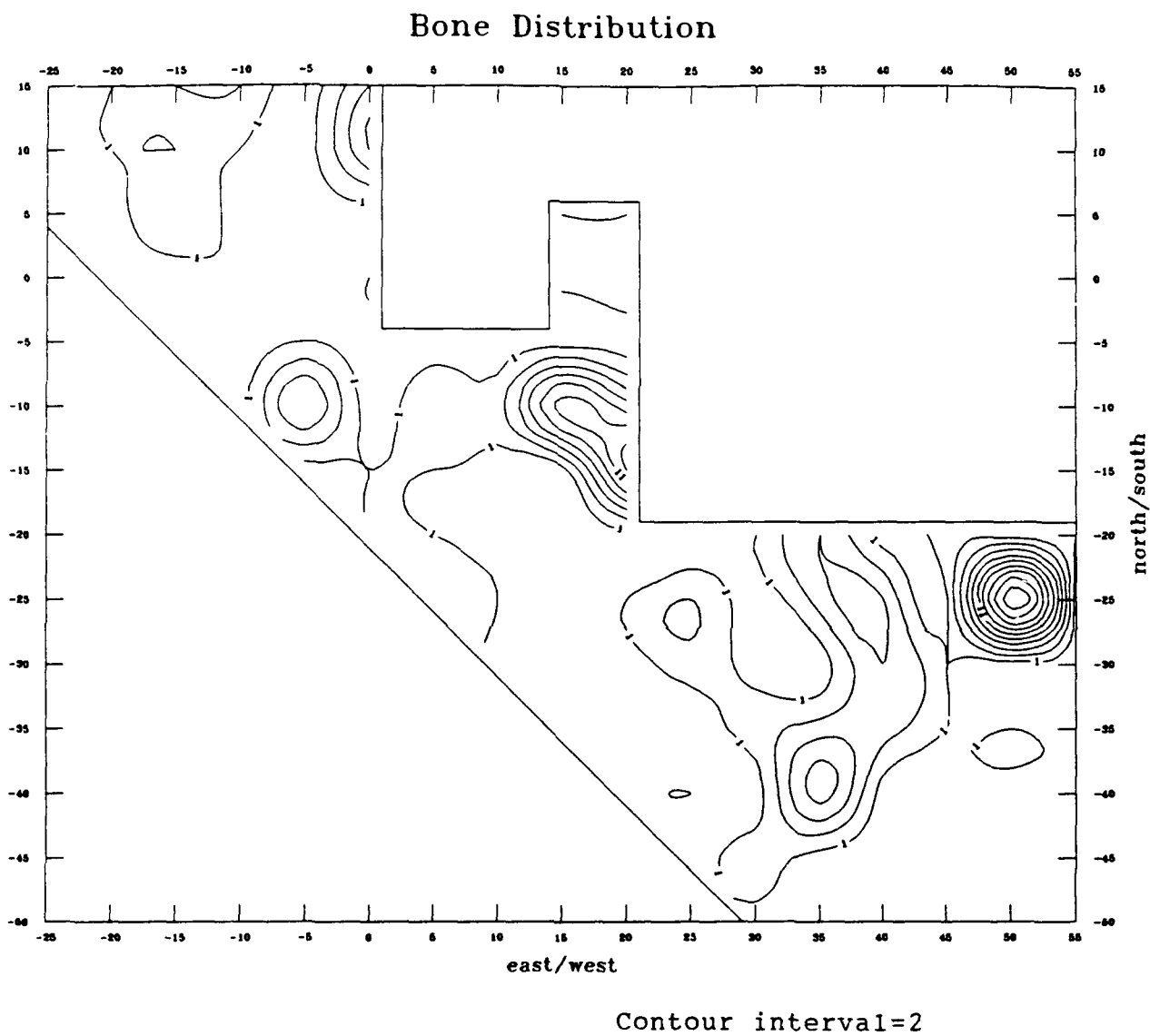


Figure 48. Map of the distribution of bone in shovel tests at 16OR130.

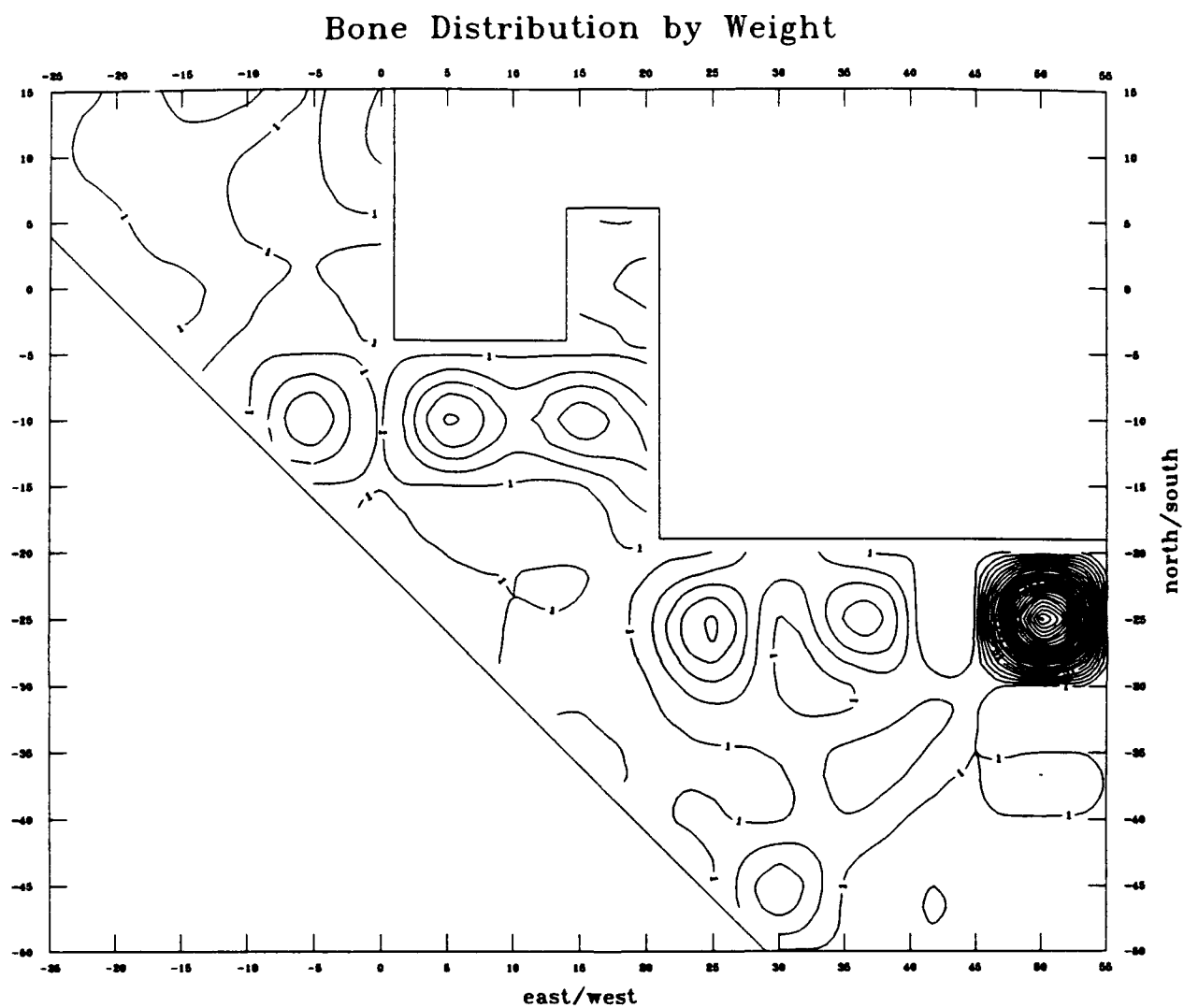


Figure 49. Map of the distribution of bone by weight in shovel tests at 16OR130.

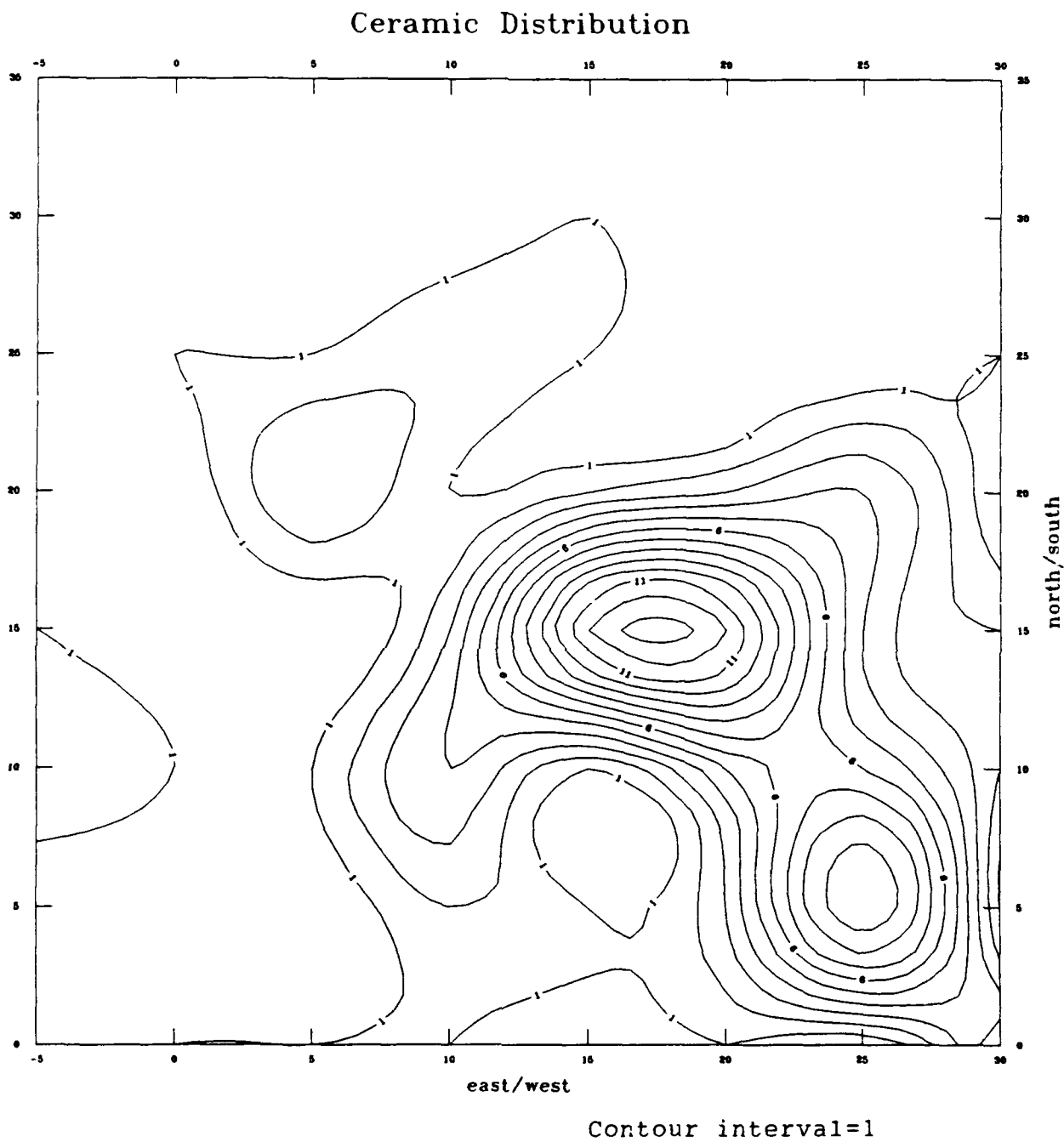


Figure 50. Map of the distribution of ceramics in shovel tests at Lot 1 of 16OR134.

Container and Table Glass Distribution

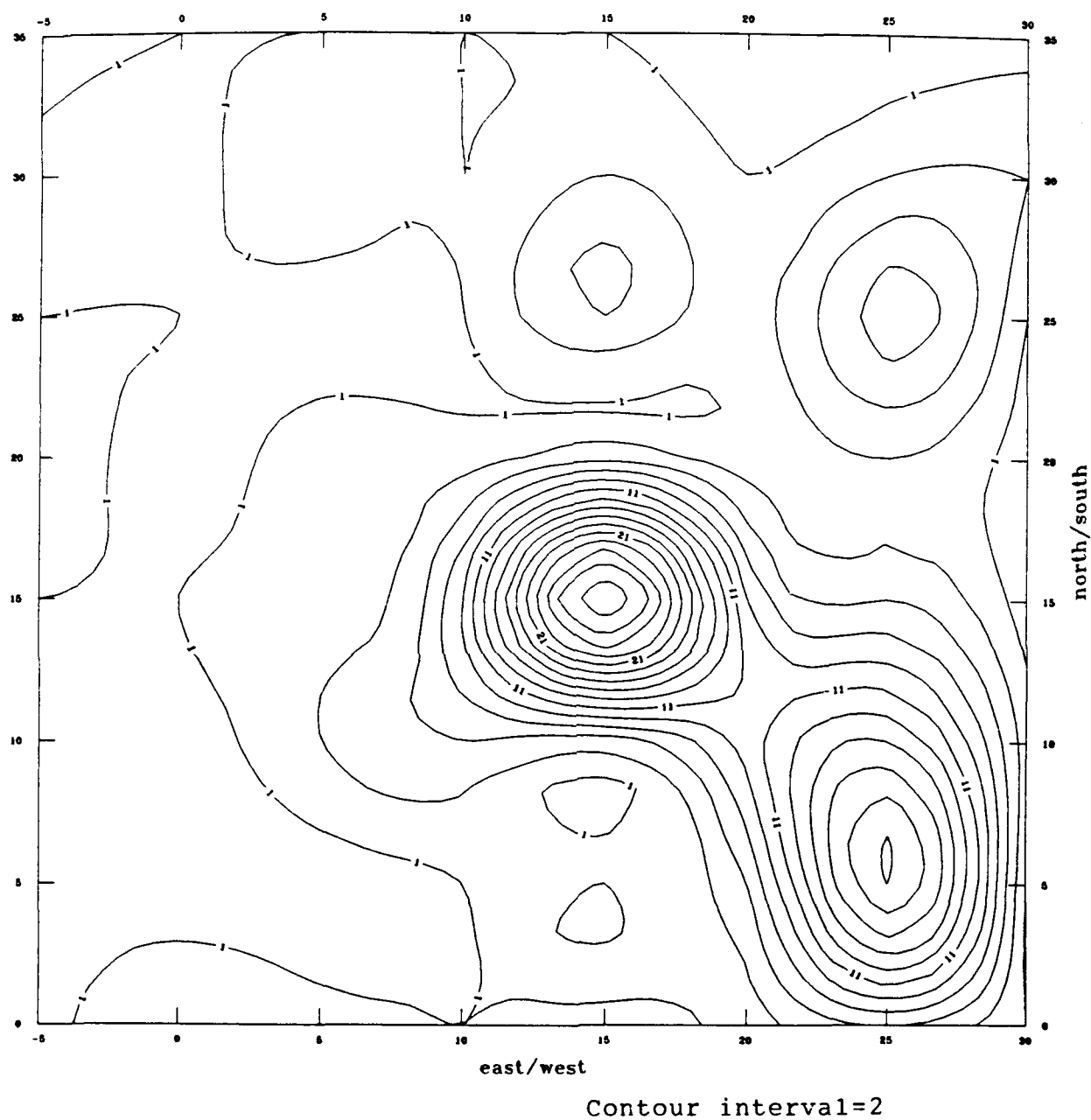


Figure 51. Map of the distribution of container and table glass in shovel tests at Lot 1 of 16OR134.

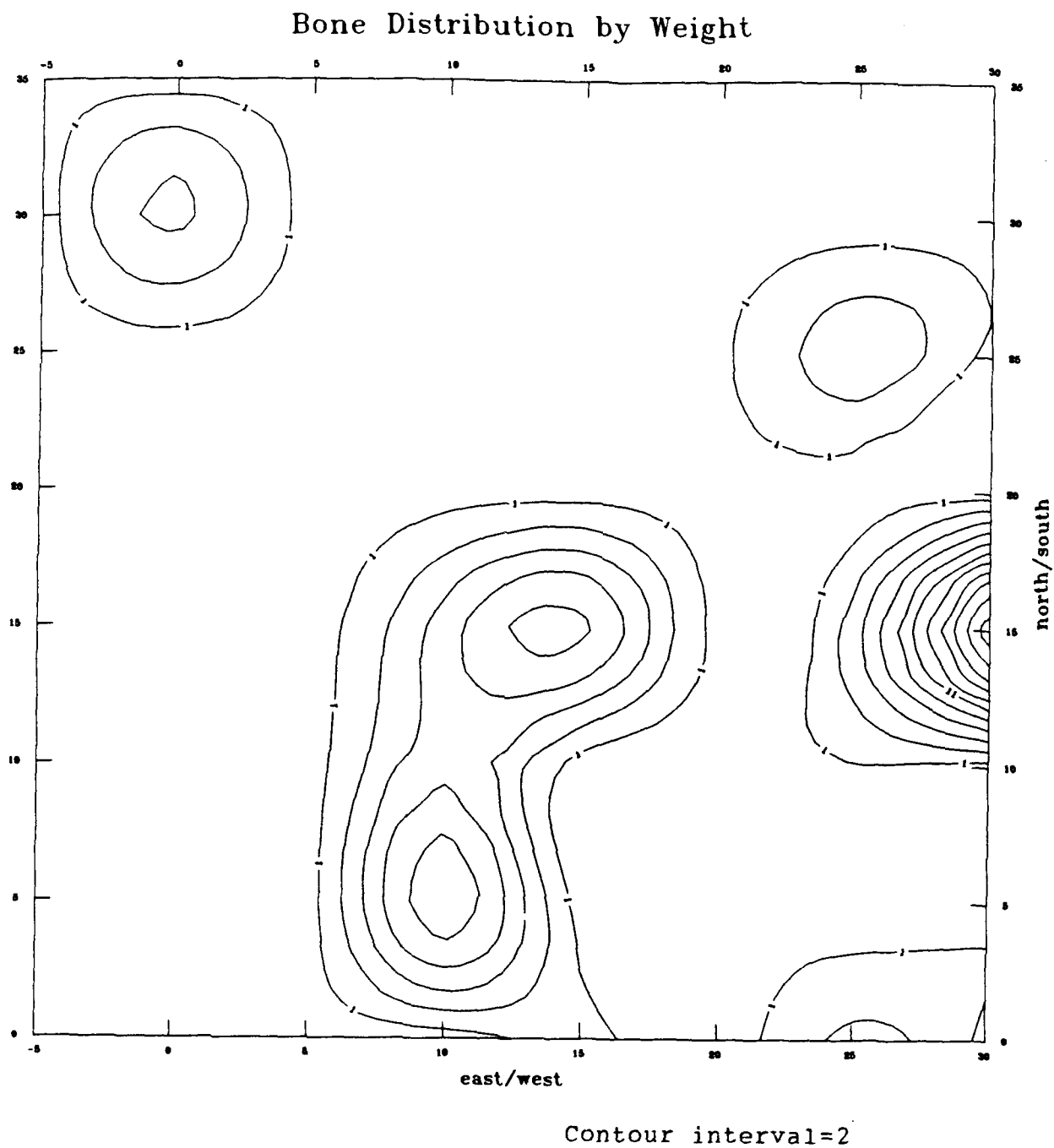


Figure 52. Map of the distribution of bone by weight in shovel tests at Lot 1 of 160R134.

Avenue, on the sides of houses (Figure 53). Container and table glass distributions, however, are obscured by refuse disposal on the square which postdates the removal of the houses. This is apparently less of a problem at 16OR130, where the open area has in practice been used as the back yards of occupied lots, and at Lot 1 of 16OR134, where occupied houses are adjacent to the property. There is little doubt that the extremely high density of container glass along Dauphine on Square 189 is the result of casual disposal (Figure 54).

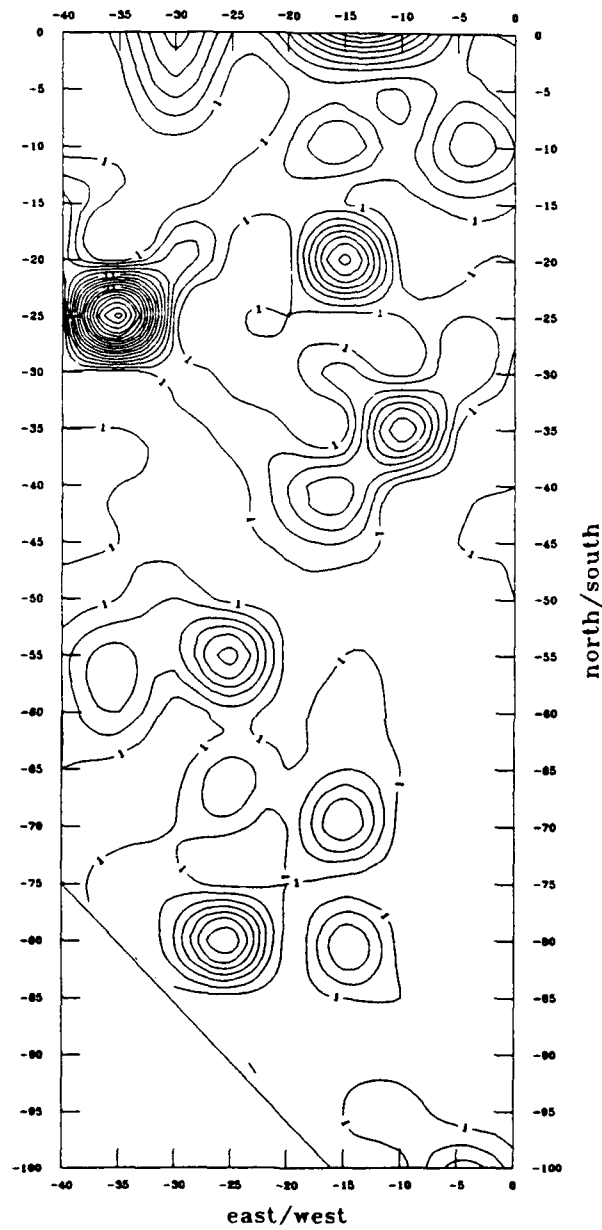
No pattern was immediately apparent from the distribution of nails, architectural glass, or their combination at 16OR130 and 16OR131. However, the distribution of the two on Lot 1 of 16OR134 was very similar to the distribution seen for ceramics and container and table glass at this site (Figure 55). This was largely the result of the distribution of pane glass to the north and east of the house (Figure 56). Patterned distribution of architectural remains may be apparent here but not at 16OR130 and 16OR131 because of differences in site formation processes. While the houses on 16OR130 and 16OR131 were intentionally removed/destroyed in a single event, the structures at Lot 1 of 16OR134 may have been abandoned and permitted to gradually decay.

Systematic shovel testing, then, provided data which permitted the recognition of patterned artifact distributions. These observations can be examined in more detail and utilized to generate additional research issues should archeological mitigation be necessary.

Evaluation of the Utility of Systematic Shovel Testing in an Urban Context

One of the frustrating aspects of systematic shovel testing combined with limited excavations is that it is difficult to assess the nature of a feature when only a 30 cm square area of it is exposed and large amounts of subsurface debris makes probing all but impossible. Nonetheless, the shovel testing regimen was successful in several respects. First, it did locate features that could be tied to historic structures shown on maps. Most of the features encountered in fact were identified in this manner. This correlation between historic map overlays generated by computer with features located in the field also indicates that the historic maps were quite accurate. Extensive excavation should confirm or disprove these identifications.

Ceramic Distribution



Contour interval=2

Figure 53. Map of the distribution of ceramics in shovel tests at 16OR131.

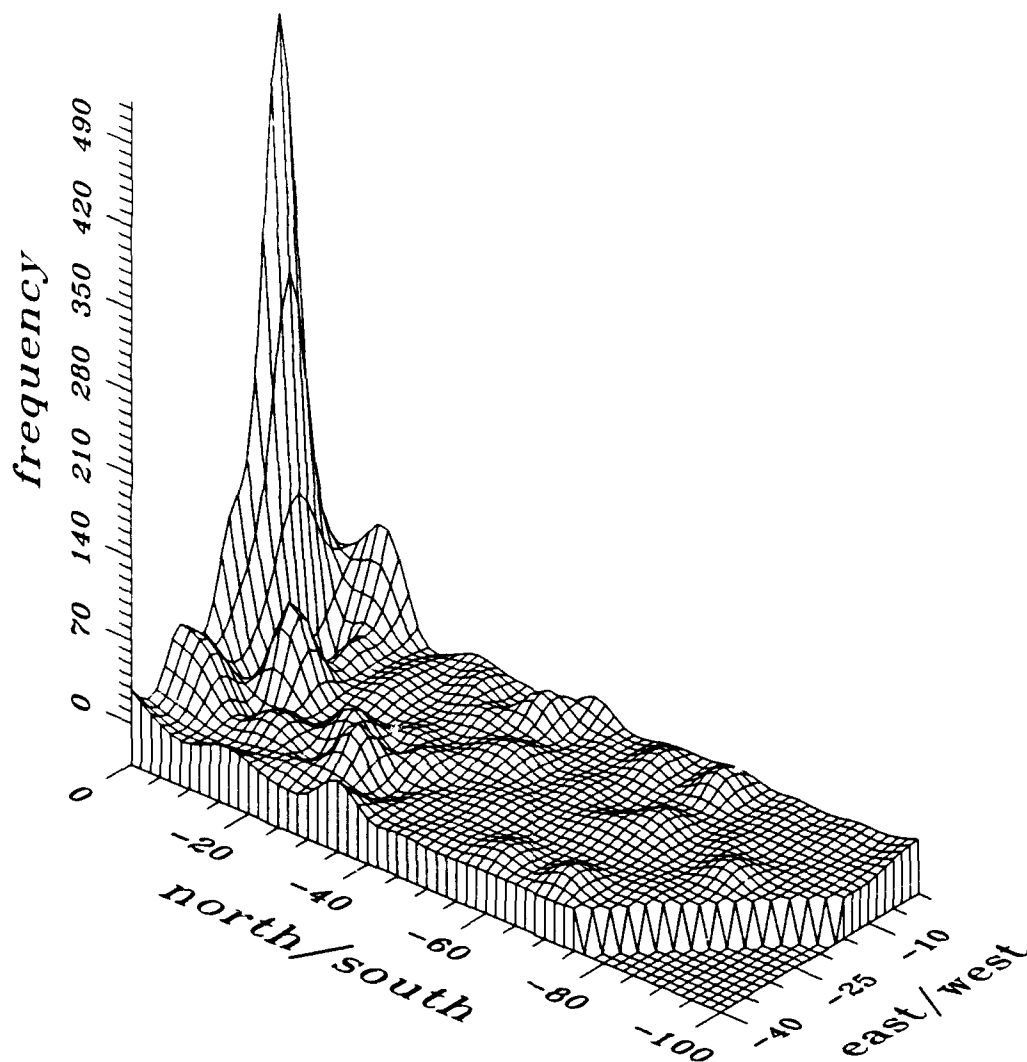
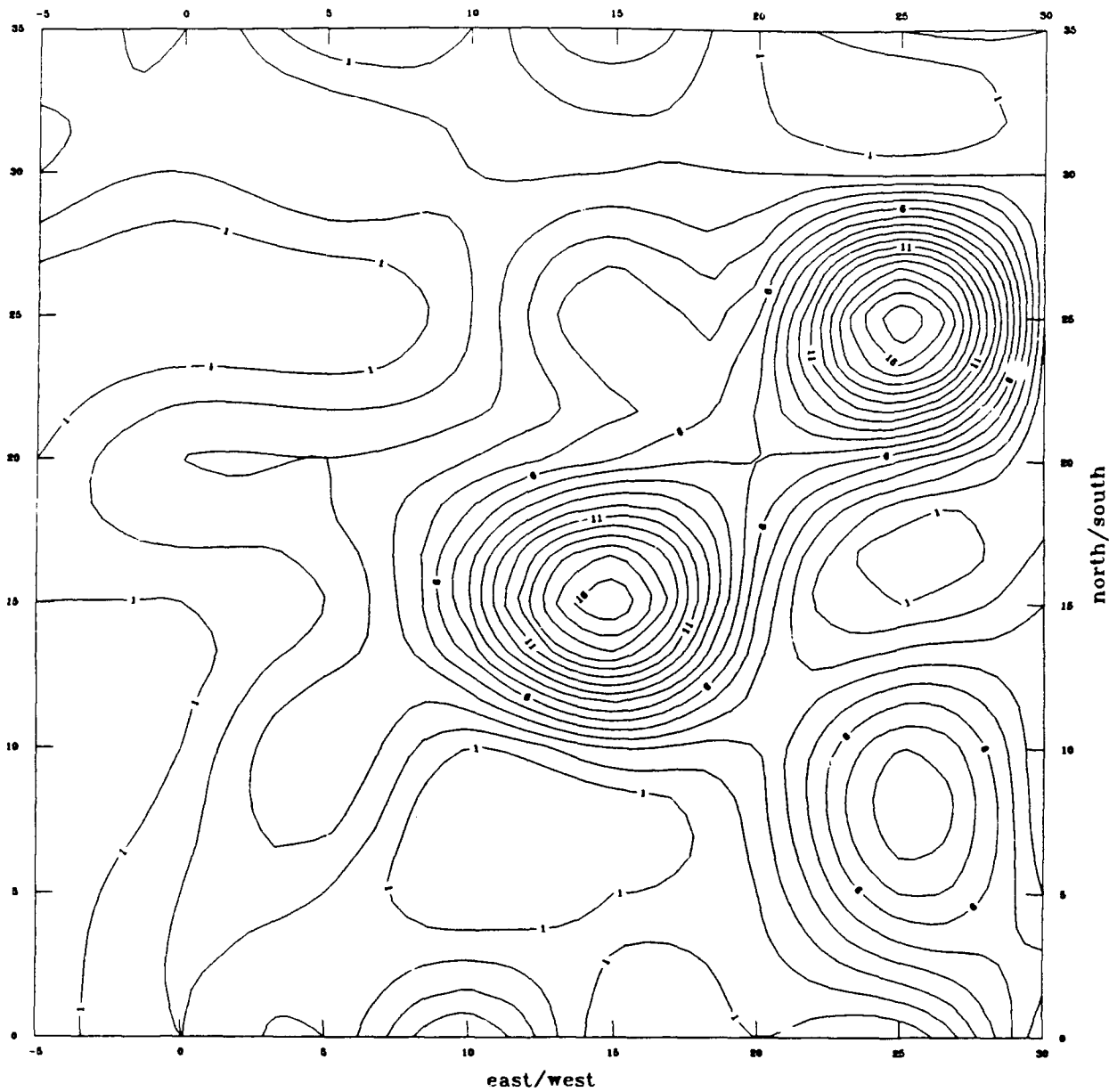


Figure 54. Surface plot of the distribution of container and table glass in shovel tests at 160R131.

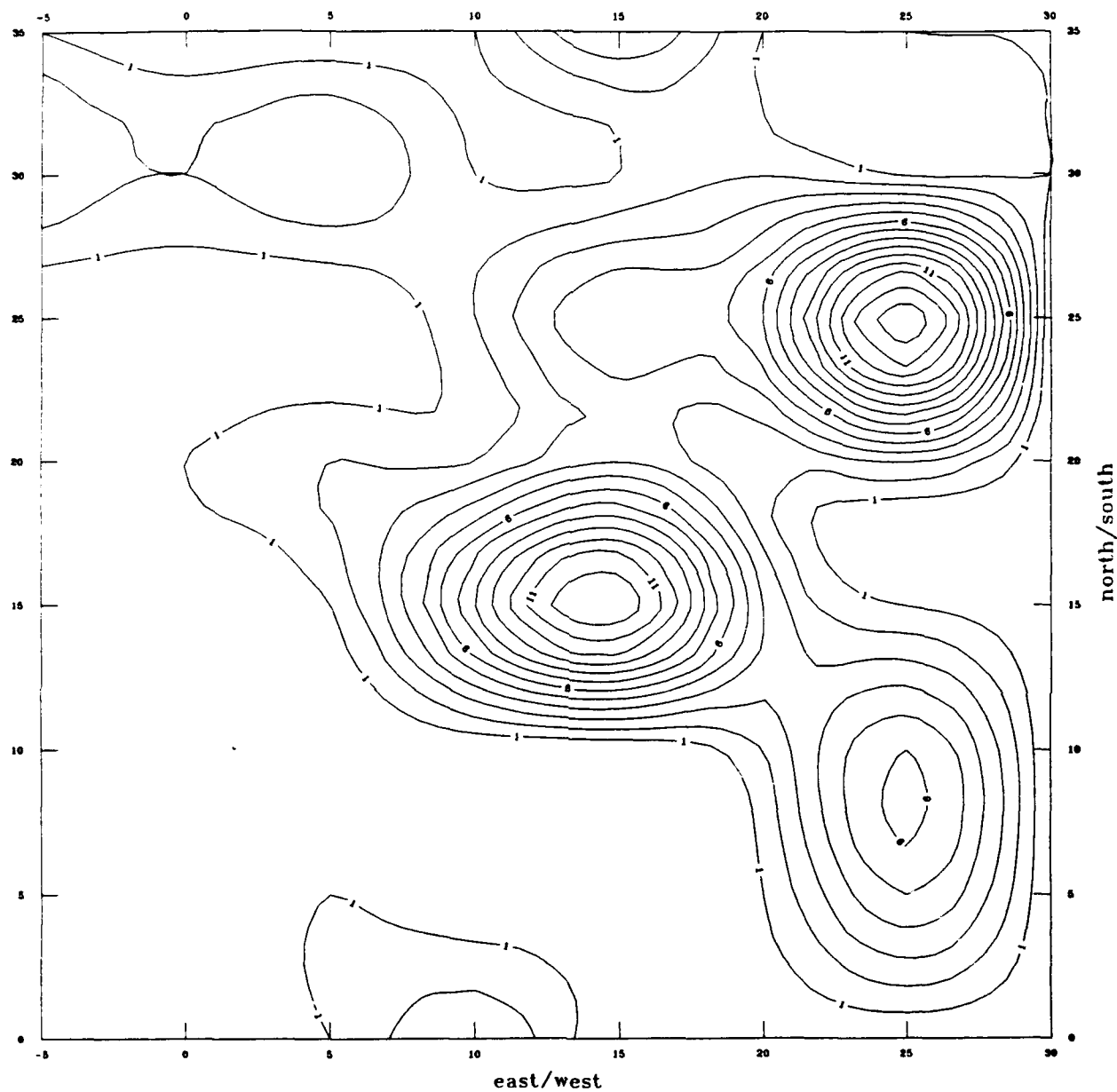
Nail and Architectural Glass Distribution



Contour interval=1

Figure 55. Map of the distribution of nails and architectural glass in shovel tests at Lot 1 of 160R134.

Architectural Glass Distribution



Contour interval=1

Figure 56. Map of the distribution of architectural glass in shovel tests at Lot 1 of 16OR134.

In that regard, it should be noted that some of the identifications were aided by clues obtained during excavation. A good example of this is the rubble layer found in most of the shovel tests on the S35 line at 16OR131. It was not until the excavation of EU4 that it was realized that the rubble served to seal the abandoned privies. Additional excavation in the area will further clarify the nature of some of the features encountered in shovel testing.

Shovel testing was very useful for confirming the presence of an antebellum component at 16OR130 (Square 122) and 16OR131 (Square 189). Until shovel testing was undertaken, it was uncertain whether this component was present on either of the squares, although the computer-generated map overlays suggested that it was. Then too, the concentration of material adjacent to the levee at 16OR130 (where EU1 was ultimately placed, below) provided data concerning the unexpectedly high level of accuracy of Zimpel's 1834 map. The concentration in this area is exactly where Zimpel placed the northeast corner of the quarters complex.

Also, shovel testing confirmed the accuracy of the Sanborn Insurance map series. Some features located during systemic shovel testing were unmistakable, such as the privy found at S20 E20 at 16OR130, and these were found exactly where the maps indicated they should be. Further confirmation of the accuracy of these maps was obtained during the excavation of supplemental shovel and auger tests (see below) when a privy and a foundation were both easily located by using the computerized version of the Sanborn maps.

On the whole, the shovel tests in the unoccupied lots proved to be more informative both in terms of artifacts and features than those in the inhabited lots. Insofar as artifacts were concerned, this may be the result of the residents cleaning their yards and picking up interesting, odd, old items. Two of the residents in fact confirmed this practice (Mrs. Chester Ernst and Mrs. Clothide Ruiz, personal communication to Yakubik, 1991). Features, naturally, were more plentiful in the unoccupied areas, because one could dig in more areas where structure formerly stood.

Finally, systematic shovel testing provided data which enabled examination of artifact patterning. This was possible largely because of the tight interval used for shovel testing. Ideally, an interval even smaller than 5 m should be utilized for this purpose. Shovel

testing in an urban context such as this is the most useful method for obtaining data concerning artifact distribution.

Excavation Unit 1

Excavation. Excavation Unit 1 (EU1) was located at 16OR130 (Square 122) in the area where shovel tests revealed a concentration of antebellum ceramics (Figures 25, 43, and 44). CAD-generated overlays of historic maps, particularly the 1834 Zimpel (Figure 5) and the 1869 subdivision plat (Figure 6), indicated that the quarters for the Jourdan brickyard were located either here or under the levee immediately to the west. The southwest corner (unit datum for vertical control) was placed at S28 E10, and the unit measured 1 x 2 m. The long axis of the unit was oriented east/west. The unit was excavated in arbitrary levels. Levels 1, 8, and 9 measured 10 cm depth. Levels 2 through 7 measured 5 cm depth, however, in order to maximize diachronic control.

Level 1 (0-10 cm) was virtually sterile until approximately 8 cm below datum. Material collected between 8 and 10 cm consisted primarily of small amounts of brick and bone. Artifacts were more plentiful in Level 2 (10-15 cm) and Level 3 (15-20 cm). Early-to-mid-nineteenth century material, including whiteware, pearlware, and transitional pearlware/whiteware types, as well as late-eighteenth/early-nineteenth-century creamware and redwares, predominated in these levels. However, mid-to-late-nineteenth- and early-twentieth-century ironstones were also collected (Appendix II). One sherd from Level 3 had a backmark of the Edwin M. Knowles China Company of East Liverpool, Ohio, dating 1900 to 1948 (Gates and Ormerod 1982:99, Figure 82a). Other chronologically diagnostic material included amethyst bottle fragments manufactured by an automatic bottle machine (Level 2), a cosmetic bottle embossed "JERGENS" (Level 2), and an amethyst cylinder ink bottle manufactured by an automatic bottle machine (Level 3, from 20 cm below datum), all of which date to the early-twentieth-century. Other materials included glass, pipestems, bone buttons, a bone toothbrush fragment, glass and ceramic marbles, some bone, nails, spikes, and large amounts of crushed brick. Artifacts were collected primarily from the eastern 1/2 of the unit.

Artifact density decreased in Level 4 (20-25 cm) and Level 5 (25-30 cm), and most of the material was still concentrated in the eastern 1/2 of the unit. The ratio of antebellum ceramics (coarsewares, creamware,

pearlware, and antebellum whitewares) to postbellum ceramics increased from 2:1 for Levels 2 and 3 to 4:1 for Levels 4 through 7. Thus, despite the intrusion of postbellum material, cultural deposits appeared to be stratified.

Level 6 (30-35 cm) yielded little material other than a concentration of semi-circular wire fragments in the northwest central portion of the unit. By Level 7 (35-40 cm) it became obvious that these wire fragments derived from an intrusive trash pit located in the northwest corner of the unit (Figure 57). The trash pit, distinguished by the concentration of corroded wire and iron oxide staining and loose, moist soils, was designated Feature 1. The feature was excavated separately from the remainder of the unit in Levels 7, 8 (40-50 cm), and 9 (50-60 cm). The bottom of the trash pit was at 60 cm below datum. The wire fragments appeared to be the corroded springs of a cushion or mattress. Also recovered from the trash pit were fragments of a saucer of "Tea Leaf" ironstone, which was popular during the period between 1880 and 1910 (Ray 1974:221-222). This saucer bore the 1880-1904 period backmark of Mellor, Taylor and Co. of Burslem, England (Godden 1964:432). Crossmending fragments of this saucer demonstrated that the deposits in the trash pit between 35 and 60 cm depth were laid during a single episode.

Other artifacts recovered from the trash pit included ceramic buttons, a clock, a butterknife with an American flag embossed on the blade, and late-nineteenth/early-twentieth-century bottles. Levels 7 (35-40 cm), 8 (40-50 cm), and 9 (50-60 cm) were virtually sterile except for the material recovered from within Feature 1.

As shown in Figure 57, a wood post was found immediately adjacent to the southeast corner of Feature 1 at about 40 cm below datum. This post was designated as Feature 2. Feature 2 was associated with tiny brick fragments and slate. It extended to 85 cm below datum, and measured 8 x 14 x 47 cm. The bottom of the post was flat, and it was too poorly preserved to determine how it was cut.

Figures 58 and 59 illustrate the west and north profiles of EU1. Stratum I consisted of a 10YR 3/2 (very dark grayish brown) clay loam, which graded to a 10YR 5/2 (brown) clayey silt at about 20 cm below datum. A concentration of crushed brick fragments occurred at

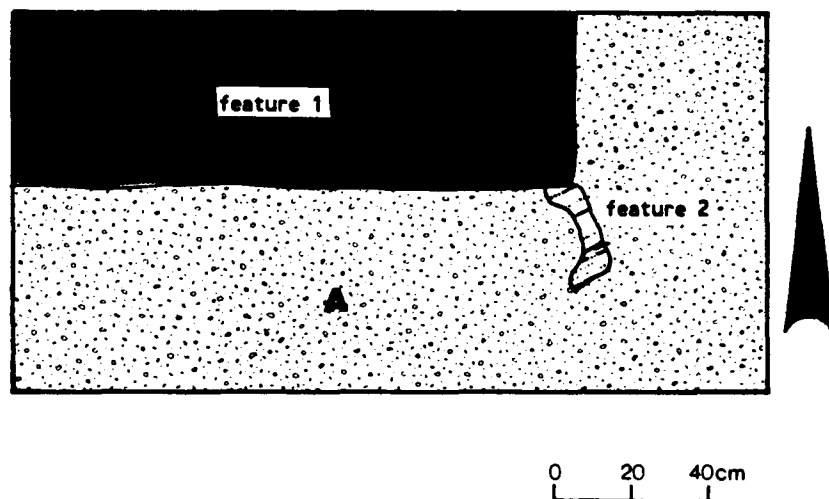


Figure 57. Plan of EU1 at 50 cm below datum.

KEY

- | | |
|-----------|---|
| A. | 10YR 5/2 (grayish brown) clayey silt to silty clay (grades to a 2.5Y 5/2 [grayish brown] silty clay with depth) |
| Feature 1 | Concentration of corroded metal and other trash in a 10YR 5/2 (grayish brown) clayey silt matrix |
| Feature 2 | Upright wood post, highest point 39 cm below datum |

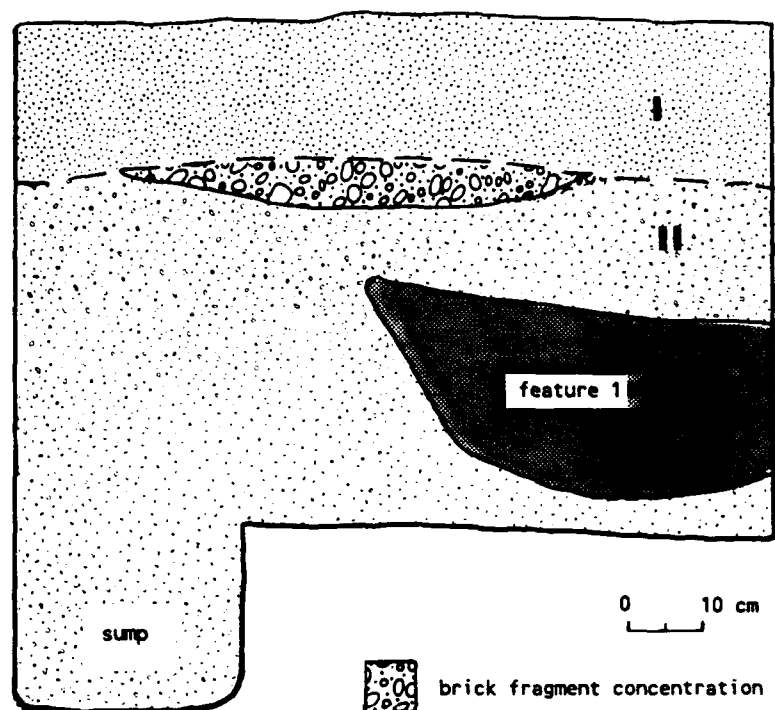


Figure 58. Profile of the west wall of EU1.

KEY

Stratum I	10YR 3/2 (very dark grayish brown) clay loam
Stratum II	10YR 5/2 (grayish brown) clayey silt to silty clay (grades to a 2.5Y 5/2 [grayish brown] silty clay with depth)
Feature I	Concentration of corroded metal and other trash in a 10YR 5/2 (grayish brown) clayey silt matrix

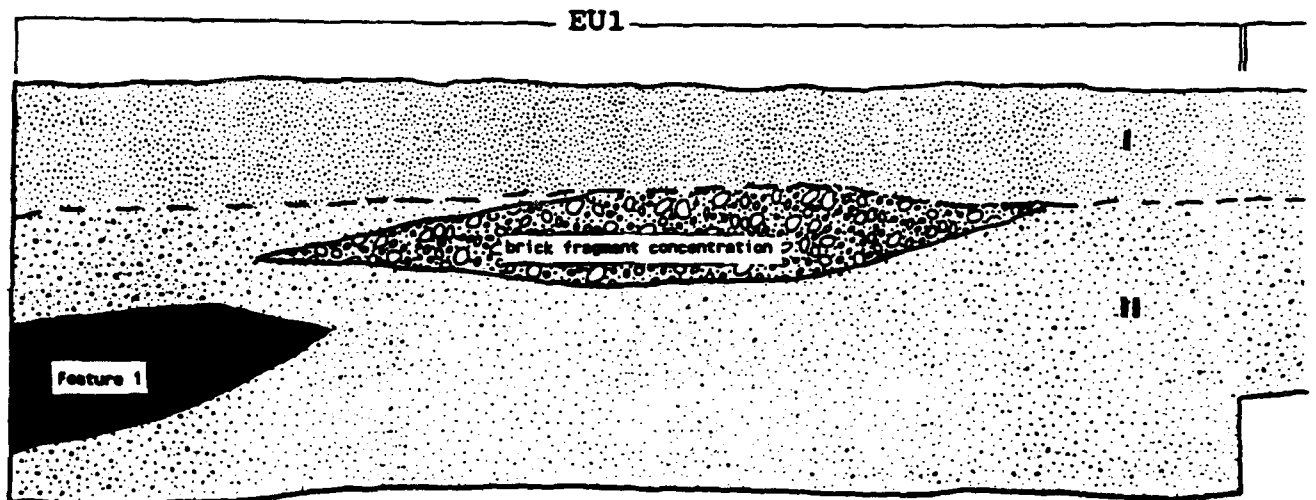
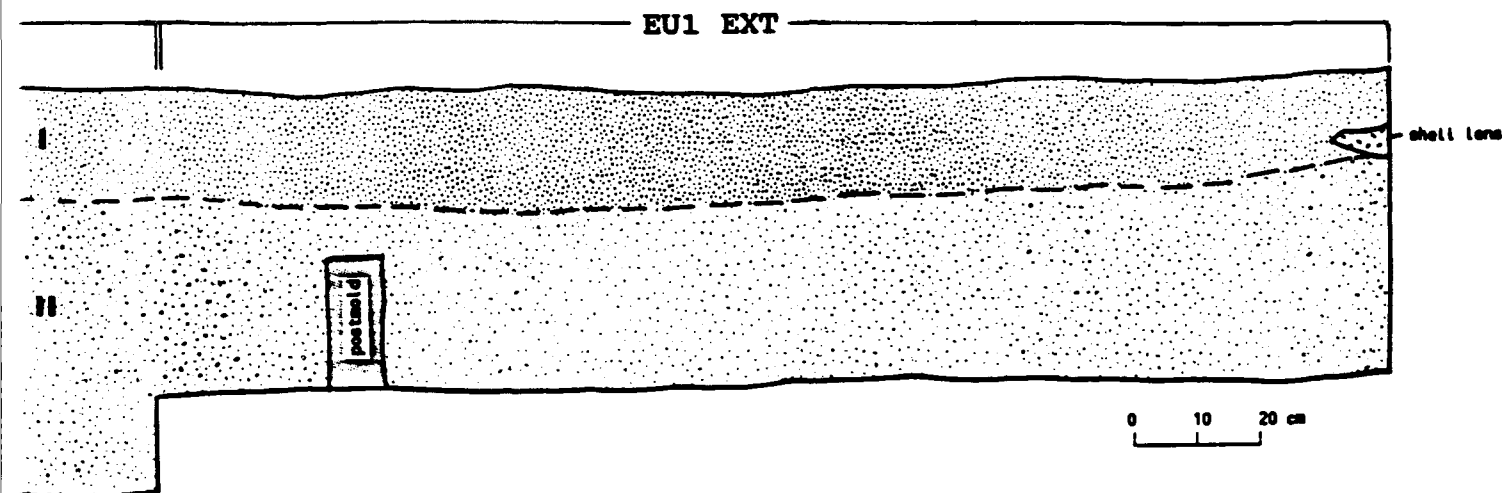


Figure 59. Profile of the north

KEY

Stratum I	10YR 3/2 (very dar
Stratum II	10YR 5/2 (grayish clay (grades to a silty clay with de
Feature I	Concentration of c trash in a 10YR 5/ silt matrix
Postmold	Unconsolidated 10Y brown) clayey silt



f the north wall of EU1 and EU1 ext.

KEY

/2 (very dark grayish brown) clay loam

/2 (grayish brown) clayey silt to silty
grades to a 2.5Y 5/2 [grayish brown]
clay with depth)

tration of corroded metal and other
in a 10YR 5/2 (grayish brown) clayey
atrix

olidated 10YR 3/2 (very dark grayish
clayey silt.

the approximate interface of these two strata. While Feature 1 extended into the west wall of EU1, it only partially extended into the north profile (cf. Figure 57). Again, the feature was distinguished from the surrounding matrix only by slightly looser and more moist soil and by the concentration of corroded wire and iron-oxide staining. Thus, it is likely that the uppermost levels of relatively sterile soil that covered the trash pit were not recognized during excavation or distinguishable in profile. This would, however, explain the apparently intrusive, late-nineteenth/early-twentieth-century material collected from Levels 3 through 6, as well as the concentration of artifacts in the eastern portion of the unit in Levels 2 through 5. Also, an automatically-manufactured cylinder ink bottle was recovered from the area directly overlying Feature 1. This bottle, then, suggests a terminus post quem of 1903 for the filling of the trash pit. Finally, the lens of brick fragments may also be associated with Feature 1. The layer of crushed brick may have served as a cap for the trash pit.

A 1 x 2 m unit was excavated adjacent to the east end of EU1 and was designated EU1 Extension (EU1 ext). The long axis of the extension was oriented east/west. The unit was excavated in the same arbitrary levels as was EU1 proper.

As was the case in EU1, there were few artifacts in Level 1 (0-10 cm) of EU1 ext, and most of these were recovered from 8 to 10 cm below datum. At 10 cm below datum, an oyster shell lens was uncovered in the easternmost 30 cm of the unit extension. Artifacts were concentrated in Levels 2 (10-15 cm) and 3 (15-20 cm), although one pearlware sherd was collected from Level 5 (25-30). Ceramics, buttons, pipe fragments, bullet cartridges, metal gaslamp fragments, bone, and nails were recovered from EU1 ext. Diagnostic glass included a cosmetic bottle marked "JERGENS" (Level 1) and a pharmaceutical bottle base with an Owens Illinois Glass Co. mark that dates to the period of 1929 to 1954 (Toulouse 1971:403) (Level 2).

As was the case in EU1 proper, both antebellum and postbellum ceramics were recovered from EU1 ext. Table 10 provides the frequencies and relative frequencies of coarsewares, creamware, pearlware, whiteware, and ironstone collected from both the unit and the unit extension. The excavation levels do not seriate. This is undoubtedly due to the disturbance caused by the trash pit feature in EU1, as well as sampling error.

Table 10. Relative Frequencies of Ceramics in EU1 and EU1 ext.

Level	Coarseware	Creamware	Pearlware	Whiteware	Ironstone	Other	N
1 & 2	3 (2.5%)	10 (8.3%)	59 (49.2%)	30 (25.0%)	11 (9.2%)	7 (5.8%)	120
3	9 (6.7%)	3 (2.2%)	79 (58.5%)	22 (16.3%)	17 (12.6%)	5 (3.7%)	135
4	1 (2.5%)	4 (10.0%)	16 (40.0%)	11 (27.5%)	6 (15.0%)	2 (5.0%)	40
5 - 7		1 (3.8%)	18 (69.2%)	7 (26.9%)			26

However, the high relative frequency of antebellum ceramics, particularly pearlware, is noteworthy.

Levels 6 (30-40 cm) and Levels 7 (40-50 cm) were excavated in 10 cm levels because of the decrease in material noted in Levels 4 and 5 which were sterile with the exception of occasional brick bits and charcoal. However, two postmolds were noted in the north and east profiles following the excavation of these levels (Figures 59 and 60). These were filled with 10YR 3/2 (very dark grayish brown) unconsolidated clayey silt. The postmold located in the east wall measured approximately 9 cm in diameter. It was round, and extended from 25 to 79 cm below datum. The postmold located in the north wall was also approximately 9 cm in diameter, was round with a tapered bottom, and extended from 21 to 62 cm below datum. With the exception of these two features and the oyster shell lens at 10 cm below datum, stratigraphy in EU1 ext was identical to EU1 proper (Figures 59 and 60).

Interpretation. Excavation of EU1 and EU1 ext confirmed the concentration of antebellum period artifacts noted in shovel tests. The antebellum ceramic distribution (Figures 43 and 44) seems to confirm CAD-generated data that this was the edge of the quarters. Although deposits are relatively shallow (approximately 8 to 30 cm below datum) and there has been some disturbance in the form of an intrusive trash pit, deposits are largely intact. In addition, while Feature 2 may be related to the trash pit, it as well as the two postmolds in EU1 ext may in fact be associated with the quarters complex.

The recovery of eighteenth-century coarse earthenwares from EU1 was particularly exciting. These included a Spanish Olive Jar fragment and Lead-Glazed Pink Earthenware, which fits the description for the Spanish type, El Morro ware (Yakubik 1990:230-232). The frequency of Spanish ceramics in archeological contexts in southeastern Louisiana is relatively insignificant (Yakubik 1990), so the recovery of these two types from the same unit is particularly interesting. Also, the co-occurrence of coarsewares with primarily early-nineteenth-century ceramics indicates that these deposits derive from the quarters complex rather than any other component at the site. While the use of both French faience and continental coarsewares decreased with the wide-spread introduction of British ceramics to southeastern Louisiana ca. 1780, the decrease in coarseware utilization was less dramatic. This is

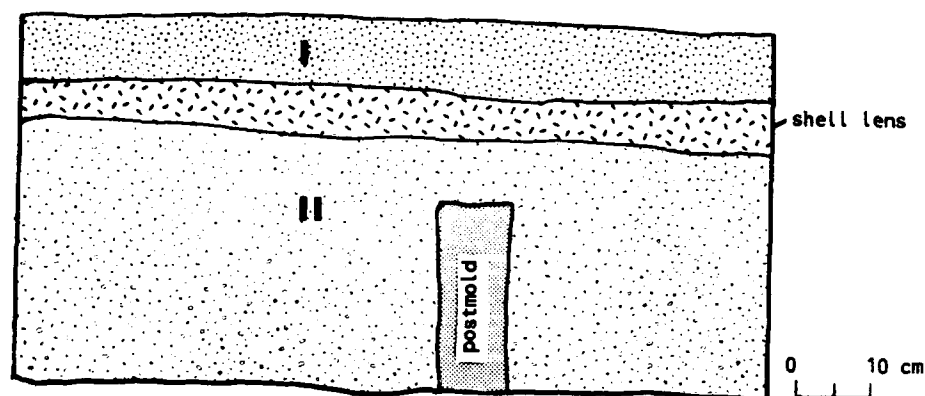


Figure 60. Profile of the east wall of EU1 ext.

KEY

Stratum I	10YR 3/2 (very dark grayish brown) clay loam
Stratum II	10YR 5/2 (grayish brown) clayey silt to silty clay (grades to a 2.5Y 5/2 [grayish brown] silty clay with depth)
Postmold	Unconsolidated 10YR 3/2 (very dark grayish brown) clayey silt.

particularly true within lower socioeconomic contexts (Yakubik 1990:195-196). Finally, the recovery of Mottled Green Lead-Glazed Redware was somewhat surprising. This French coarseware is generally not recovered from contexts postdating 1780 (Yakubik 1990:237-238). This suggests relict-vessel use, another indicator of lower socioeconomic contexts. It might also suggest archeological deposits are present here from the colonial period (cf. Chapter 7) but the relatively low frequency of creamware suggests that an explanation based on relict use is more likely. Extensive excavation in this area would resolve this issue.

One 2-liter soil sample had been removed from the trash pit in this excavation unit. Flotation methods described in Chapter 8 were used to extract carbonized plant remains. Mr. Phil Dering of Texas A & M University (personal communication to Yakubik, 1991) indicated that no plant materials were identified in the sample.

Excavation Unit 2

Excavation. Excavation Unit 2 (EU2) was located at 16OR130 (Square 122) in the area where CAD-generated overlays of historic maps (Figures 6 and 9) indicated one of the Jourdan Brickyard kilns was formerly located. Shovel tests at S35 E30 and S35 E35 revealed a layer of 5YR 4/6 (yellowish red) silt mixed with similarly-colored brick fragments. Beneath this stratum was a layer of 7.5YR 4/2 (brown/dark brown) silt. It was hypothesized that these unusual soils were related to the former kiln. Supplementary shovel tests at S32.5 E35, S34 E30, and S34 E35 revealed similar stratigraphy, while one test at S32.5 E30 located a ceramic drainage pipe which had probably impacted the feature.

Thus, shovel testing indicated that these unusual soils extended north/south at least from S32.5 to S35 and east/west at least from E30 to E35. The 1 x 2 m unit was therefore placed with its southwest corner (unit datum) at S35 E31, and its long axis oriented north/south (Figure 25). Initially, excavation was by arbitrary 10 cm levels. Later, natural levels were utilized.

Level 1 (0-10 cm) consisted of a 10YR 3/2 (very dark grayish brown) clay loam which contained large amounts of brick fragments, rubble, nails, and bone. Relatively modern (early- to mid-twentieth-century)

material was also recovered, including a golf ball, a knife with a stainless steel blade, a light socket, Mardi Gras beads, and a 1941 nickel. Ceramics consisted primarily of ironstone, although one pearlware sherd was collected. Diagnostic glass included fragments of bottles manufactured by an automatic bottle machine as well as two marked bottle fragments. The first of these, found on a brown pharmaceutical bottle, was from the Whitall-Tatum "Glasstown" plant in Millville, New Jersey, and dated 1935-1938 (Toulouse 1971:544). The second mark was that utilized by the Knox Glass Bottle Co. of Knox, Pennsylvania during the period 1924 to 1968 (Toulouse 1971:293).

A concentration of burned trash was noted in the northern 1/2 of the unit within Level 2 (10-20 cm) at 10 cm below datum. Materials included most of an embossed ironstone plate, a bottle neck, and pressed glass mixed with large amounts of charred wood. At about 15 cm below surface, it appeared that this material derived from an ovoid trash pit which measured approximately 50 cm in diameter at its widest extent. The pit was poorly defined, and was distinguished primarily by unconsolidated, disturbed soils. Soils from a depth of 15 to 40 cm below datum were removed from the burned trash feature for laboratory flotation and nested water screening. Artifacts recovered from the feature to this depth included a clock, fragments of a parian figurine, pressed glass fragments, fragments of a "Dr. Hostetter's Stomach Bitters" bottle (1858-1902 [Wilson 1981:133]), ironstone, and porcelain. One two-liter soil sample taken from this feature was floated by employing methods described in Chapter 8. Carbonized plant remains consisted of 3.6 grams of *Pinus* (pine), 1.7 grams of *Carya* (pecan or hickory), and .3 grams of *Quercus* (oak). All of these are commonly used building materials, and are also used as firewood.

A stratum of 5YR 4/6 (yellowish red) silt with large brick fragments appeared across the entire unit at approximately 25 cm below datum. The brick fragments within the silt, which was interpreted as pulverized brick, were very soft and could be easily cut with a trowel. Very little charcoal was present within this stratum.

In addition to the burned trash feature, four additional, smaller, shallow features were noted between 24 and 30 cm below datum (Figure 61). The first of these, located in the northeast corner of the unit, was semi-circular in shape. It was filled with 10YR 4/2

Zone I

Zone II

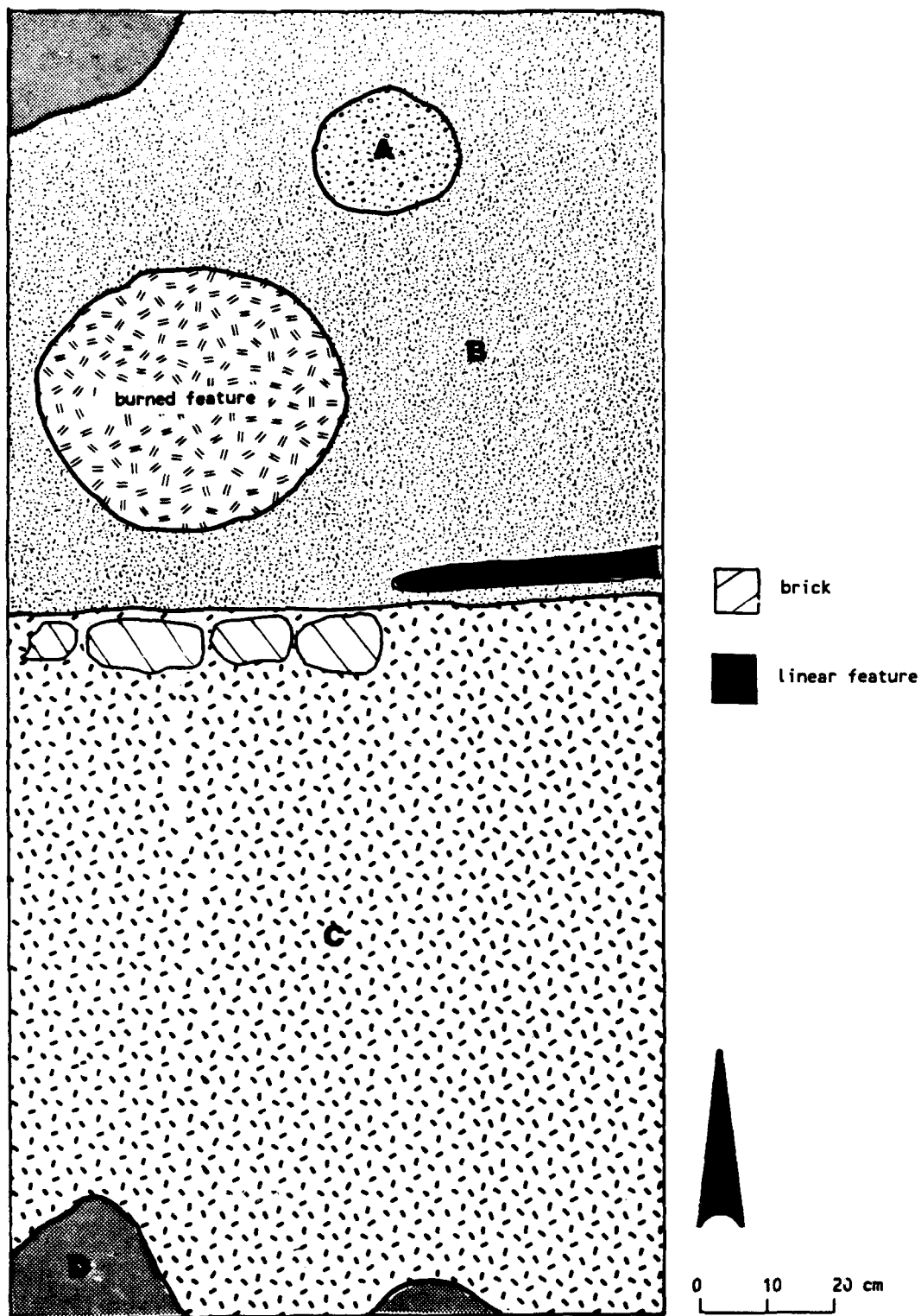


Figure 61. Plan of EU2 at 30 cm below datum.

KEY TO FIGURE 61

- A 10YR 4/3 (brown/dark brown) clayey silt
 with 10YR 3/2 (very dark grayish brown)
 mottling
- B 7.5YR 4/6 (strong brown) silt
- C 5YR 4/6 (yellowish red) silt with brick
 fragments
- D 10YR 4/2 (dark grayish brown) silty clay
- Burned feature Refuse and charcoal in a 2.5Y 5/2
 (grayish brown) silty clay matrix
- Linear feature 10YR 4/2 (dark grayish brown) clayey silt

(dark grayish brown) unconsolidated silty clay, and extended from 24 to 25 cm below datum. A second was located in the southwest corner of the unit. This was also filled with 10YR 4/2 (dark grayish brown) silty clay, and it extended from 29 to 41 cm below datum. A third semi-circular feature was located adjacent to and in the approximate center of the south wall. It extended from 30 to 33 cm below datum, and was filled with 10YR 4/2 (dark grayish brown) unconsolidated silty clay. The last of these features was located to the northeast of the burned trash feature, and measured approximately 20 cm in diameter. It extended from 25 to 28 cm below surface, and it was filled with 10YR 4/3 (brown/dark brown) clayey silt with 10YR 3/2 (very dark grayish brown) mottling. Soils from these features were removed for laboratory nested water screening. The southwest corner feature yielded one sherd of clear glass. This may suggest that this feature post-dates the kiln.

A distinct difference between the soils in the northern and southern halves of the unit was noted at 30 cm below datum (bottom of Level 3) (Figure 61). The 5YR 4/6 (yellowish red) silt with brick fragments was still present in the southern half of the unit, but the soil in the northern half was a 7.5YR 4/6 (strong brown) silt that contained very little brick. A line of bricks laid on edge extended east/west halfway across the unit where the two soils were juxtaposed (Figure 61). Opposite the bricks, and also extending east/west halfway across the unit, was a linear feature. This shallow feature (30-33 cm below datum) measured 40 cm east/west and extended into the east wall. It measured approximately 3 cm wide. The feature was filled with 10YR 4/2 (brown/dark brown) clayey silt (Figure 61). Soils from all of these features were removed for laboratory nested water screening, but no diagnostic material was recovered.

The majority of ceramic sherds collected from Levels 2 (10-20 cm) and 3 (20-30 cm) external to the burned trash feature were pearlware, although ironstone, whiteware, and yellowware were also collected. Bottle glass from these levels appeared to date from the mid-to-late-nineteenth century. Other artifacts included a spoon fragment, a fragmentary shell button, and a post-1840s ceramic button. Most of the collected material was small in size. This was especially true for artifacts collected from Level 3.

In Level 4, the unit was divided into two zones which were then excavated by natural levels. Zone I was

the area of 7.5YR 4/6 (strong brown) silt in the northern half of the unit. Zone II was the area of 5YR 4/6 (yellowish red) silt with brick fragments.

Zone I, Level 4 (30-32 cm below datum) removed the stratum of 7.5YR 4/6 (strong brown) silt. Artifacts consisted of a few tiny sherds of whiteware and pearlware and one square cut nail. The presence of a fragment of mulberry transfer-printed whiteware provides a terminus post quem of 1830 for the stratum. Beneath this was a 7.5YR 4/2 (brown/dark brown) compact, friable, silt that was virtually devoid of brick and which became increasingly compact with depth. This was excavated to 40 cm below datum as Zone I, Level 4 (32-40 cm). Artifacts recovered from this level consisted primarily of tiny pearlware sherds, although some whiteware, porcelain, and salt-glazed stoneware sherds were collected.

Zone II, Level 4 (30-33 cm below datum) removed the 5YR 4/6 (yellowish red) silt from the southern half of the unit. No diagnostic artifacts were recovered from this level, although brick, mortar, slag and cinders were collected. Beneath this was the stratum of 7.5YR 4/2 (brown/dark brown) compact, friable, silt. This was excavated to 40 cm below datum as Zone II, Level 4 (33-40 cm). While a few small sherds of creamware, pearlware, and whiteware were recovered, the presence of a single sherd of classic ironstone indicates that this stratum probably postdates 1850, although it may date as early as the 1840s (Miller 1991:10).

Because the 7.5YR 4/2 (brown/dark brown) compact silt covered the unit in its entirety at 40 cm below datum, excavation within the zones was abandoned and excavation by arbitrary levels was resumed. Little was recovered from Level 5 (40-50 cm), although one plain kaolin pipestem was collected. The compact silt graded to a 2.5Y 5/2 (grayish brown) silty clay at about 48 cm below datum. Similarly, Level 6 (50-60 cm) was sterile with the exception of the material recovered from within the burned trash feature.

As noted above, soils from the burned trash feature were removed to a depth of 40 cm below datum. Subsequently, the feature fill was removed from 40 to 60 cm below datum. It was noted that there was less charcoal at this depth than there had been between 15-40 cm below datum. Artifacts from 40 to 60 cm included additional fragments of the "Dr. Hostetter's Stomach Bitters" bottle recovered previously, a turn-molded wine

bottle, a Lea and Perrins bottle manufactured in a two piece mold with a tooled lip and a glass stopper (1880-1900; Toulouse 1971:227), ironstone fragments, pressed glass, and a seltzer maker top.

In order to avoid contamination from the trash feature during excavation of Level 6, the area immediately surrounding the feature was excavated separately from the remainder of the unit. One clear cone ink bottle manufactured by an automatic bottle machine and one light green paneled flask with a square tooled collar were recovered from these soils.

Subsequent excavation of the feature was from 60 to 65 cm, 65 to 80 cm, 80 to 90 cm, and 90 to 102 cm. Irregular depths were necessitated by the nature of the material within the feature, which included large ceramic and bottle fragments. Artifacts collected included a second Hostetter's Bitters bottle, pressed glass, a fragment of a lamp, an ironstone cup, and the majority of a classic ironstone platter. The last of these had a Johnson Brothers (Staffordshire, England) backmark that dated between 1883 and 1913 (Godden 1964:355). Fragments of the platter were recovered between depths of 60 to 90 cm. The pit appeared to terminate at about 88 cm below datum.

Figures 62 and 63 illustrate the stratigraphy of EU2. Stratum I was a 10YR 3/2 (very dark grayish brown) clay loam that graded to a 10YR 4/2 (dark grayish brown) clayey silt with 10YR 3/2 (very dark grayish brown) flecking at about 10 cm below datum. Stratum II contained large amounts of brick fragments. Stratum III, the 5YR 4/6 (yellowish red) silt, probably representing pulverized brick or brick dust, appeared between 20 and 25 cm below datum. Figure 62 illustrates the two features which intruded into this layer along the south wall of the unit. Figure 63 shows that Stratum III was truncated by the linear feature, and that Stratum IV (7.5YR 4/6 [strong brown] silt) extended to the north of the feature. Beneath Strata III and IV was Stratum V, the 7.5YR 4/2 (brown/dark brown) compact, friable silt. Stratum V graded into Stratum VI, which was a 2.5Y 4/2 (grayish brown) silty clay.

A 1 x 2 m extension (EU2 ext) was placed adjacent to the north wall of EU2 proper. The long axis of the unit extended north/south. Initially, excavation was by 10 cm levels. Later, natural levels were utilized.

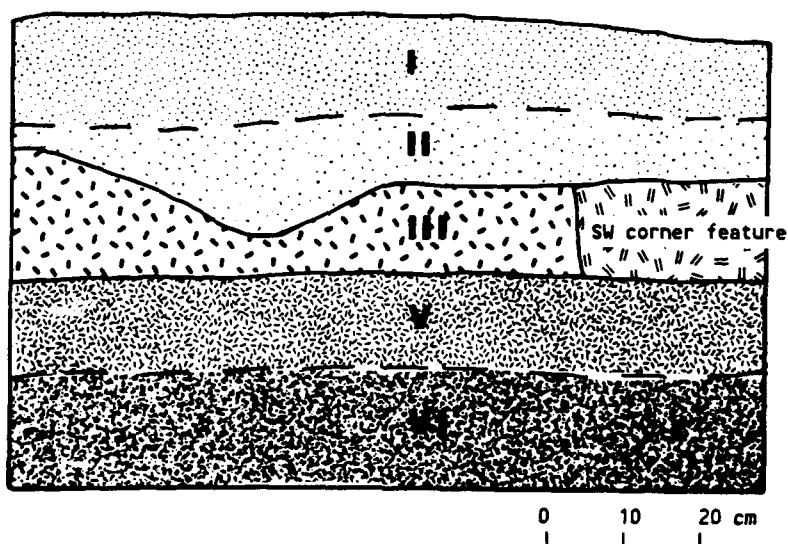


Figure 62. Profile of the south wall of EU2.

KEY

Stratum I	10YR 3/2 (very dark grayish brown) clay loam
Stratum II	10YR 4/2 (dark grayish brown) clayey silt with 10YR 3/2 (very dark grayish brown) flecking and brick fragments
Stratum III	5YR 4/6 (yellowish red) silt with brick fragments
Stratum IV	7.5YR 4/6 (strong brown) silt
Stratum V	7.5 YR 4/2 (brown/dark brown) compact, friable silt
Stratum VI	2.5Y 5/2 (grayish brown) silty clay
SW corner feature	10YR 4/2 (dark grayish brown) silty clay

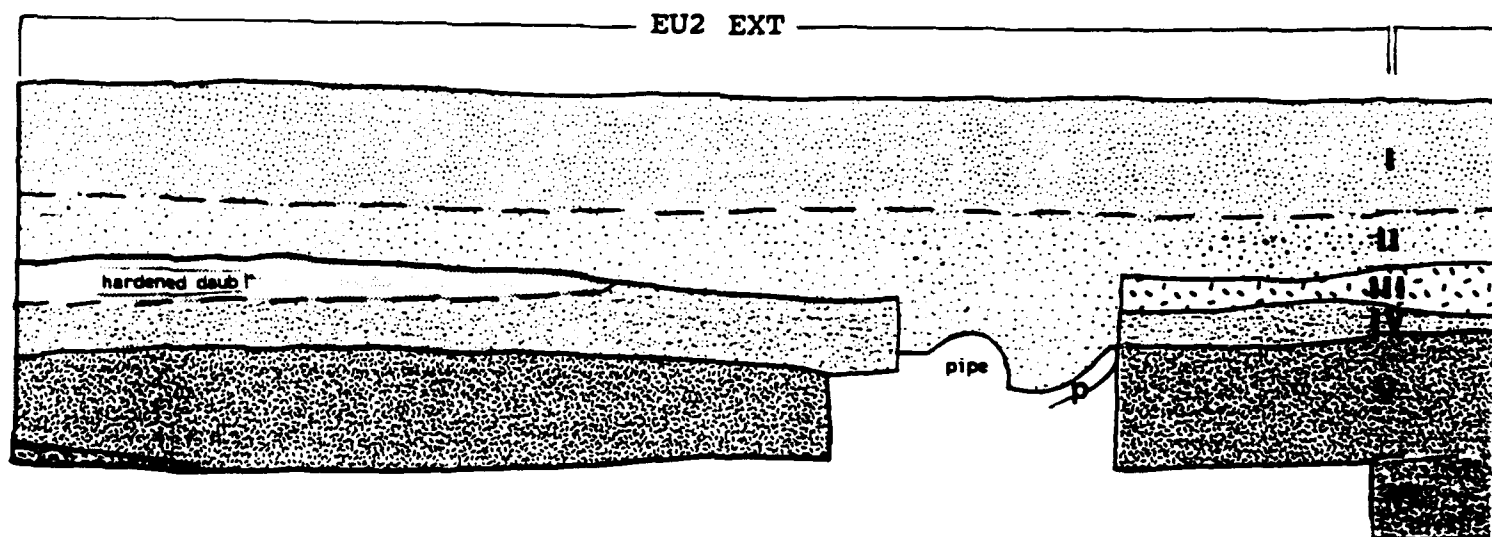
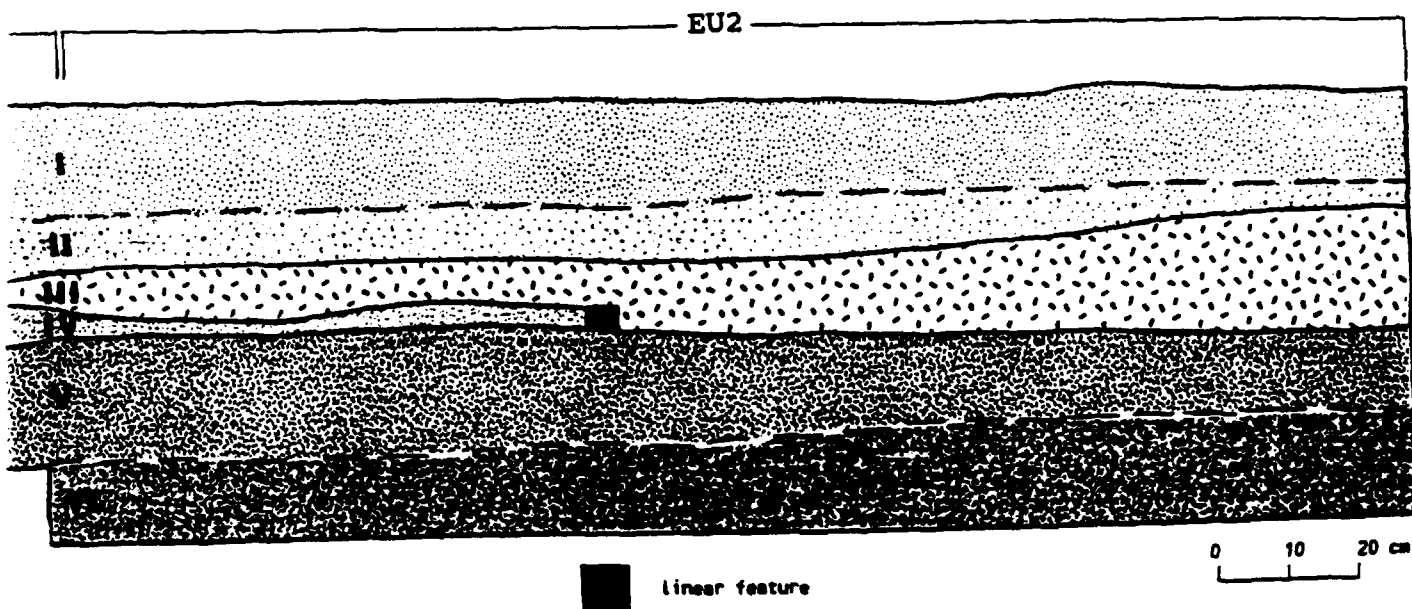


Figure 63. Profile of the east wall

KEY

Stratum I	10YR 3/2 (very dark gr
Stratum II	10YR 4/2 (dark grayish with 10YR 3/2 (very da flecking and brick fra
Stratum III	5YR 4/6 (yellowish red fragments
Stratum IV	7.5YR 4/6 (strong brow
Stratum V	7.5 YR 4/2 (brown/dark friable silt
Stratum VI	2.5Y 5/2 (grayish brc
Linear feature	10YR 4/2 (dark grayish
P	Pipe fragment



ast wall of EU2 and EU2 ext.

KEY

y dark grayish brown) clay loam

x grayish brown) clayey silt
(very dark grayish brown)
brick fragments

owish red) silt with brick

rong brown) silt

rown/dark brown) compact,

ayish brown) silty clay

k grayish brown) clayey silt

Level 1 (0-10 cm) was virtually sterile. However, a few items were recovered, including a small pharmaceutical bottle which was embossed with the mark of the Brockway Glass Co, of Brockwayville, PA. This mark postdates 1925.

The density of cultural material increased in Level 2 (10-20 cm). Ceramics included late-nineteenth/early-twentieth-century types such as ironstones, porcelain stonewares, decaled porcelain, and English majolica, as well as antebellum whitewares and pearlwares. One sherd of creamware was collected from this level, as was one sherd of Green-Glazed Redware, an eighteenth-century type. Diagnostic glass included a jar base embossed "Duraglas" and with the Owens Illinois Glass Co. mark (1940-1954 [Toulouse 1971:403]), a cosmetic bottle base, a McIlhenny Tabasco sauce bottle base with Owens Illinois marks (1929-1954 [Toulouse 1971:403]), and two other vessels which were manufactured by an automatic bottle machine (1903+). Other artifacts included a penknife with a stainless steel blade, a bone button, ceramic buttons, a toy locomotive engine, a toy wheel, a square file, as well as clearly recent debris such as beer bottle neck foil.

Level 3 was excavated from 20 cm to variable depths due to the discovery of several features. In the northern third of the unit, a surface of 7.5YR 4/6 (strong brown) daub was uncovered at depths ranging from 20 to 28 cm below datum. This area was designated Zone III. The approximate middle 1/3 of the unit, which was subsequently designated Zone II, consisted of a 10YR 4/2 (dark grayish brown) clayey silt with areas of 5YR 4/6 (yellowish red) silt. The soil appeared disturbed. This area was excavated to a depth of 30 cm below datum in Level 3. Excavation of the southernmost portion of the unit revealed the same 5YR 4/6 (yellowish red) silt that had been seen during excavation of the unit proper. This area, which was designated Zone I, was excavated to 26 cm below datum, which was the top of the yellowish red silt. Subsequent excavation of these three zones was by natural levels.

As was the case with the ceramics from Level 2, the ceramics recovered from Level 3 included both antebellum and postbellum types. Chronologically diagnostic glass for this level consisted of a single sherd of a pearl top lamp chimney (post-1883 [Haskell 1981:51]). Other artifacts included a tortoiseshell hair comb, a clock

part, a ceramic shirt stud, and a fragment of a shell button.

Zone I, Level 4 (26-33 cm) represented the removal of the 5YR 4/6 (yellowish red) silt to the depth of the underlying 7.5YR 4/6 (strong brown) silt. Ceramics collected from this level consisted of one sherd of creamware and one sherd of finger-painted pearlware. Brick fragments and a metal spike were also noted for this level. Level 5 (33-38 cm) of Zone I removed the strong brown silt to the depth of the 7.5YR 4/2 (brown/dark brown) compact, friable silt. One sherd of whiteware was collected from this level. Finally, Level 6 (38-50 cm) of Zone I removed the brown/dark brown friable silt to the approximate depth that it graded into the underlying 2.5Y 5/2 (grayish brown) sterile, silty clay. Ceramics from this level consisted of two sherds of undecorated pearlware, one sherd of blue transfer-printed pearlware, and one sherd of undecorated whiteware. In addition, 3 plain kaolin pipebowl fragments were collected. Thus the stratigraphy in Zone I was identical to that of the northernmost portion of EU2 proper (Figure 63). In addition, the ceramic artifacts collected from these levels are consistent with those recovered from the unit proper.

Excavation of Level 4 of Zone II was accomplished by removal of three sub-levels (30-33 cm, 33-40 cm, and 40-47 cm). From 30 to 33 cm below datum, polychrome hand-painted ironstone, black transfer-printed porcelain, blue transfer-printed pearlware, and creamware were recovered. This mixture of early and later materials was characteristic of Level 2 and 3 of EU2 ext. However, with the exception of one yellowware sherd, ceramics recovered below this depth in Zone II consisted exclusively of whiteware, pearlware, and creamware. No other diagnostic material was collected from this area.

Initially, it was believed that Zone II represented a single disturbance episode. By 40 cm below surface, it was obvious that there had actually been two events (Figure 64). The first of these was the excavation of a trench for the laying of a drainage pipe that extended east/west across the unit. The second episode was the excavation of an oblong shallow pit to the north of the pipe trench for the burial of a large dog. Interestingly, numerous fragments of wood were noted in this area, suggesting that the dog may have been buried in a "coffin." Between these two excavations was a small, wedge-shaped area of undisturbed 7.5YR 4/6

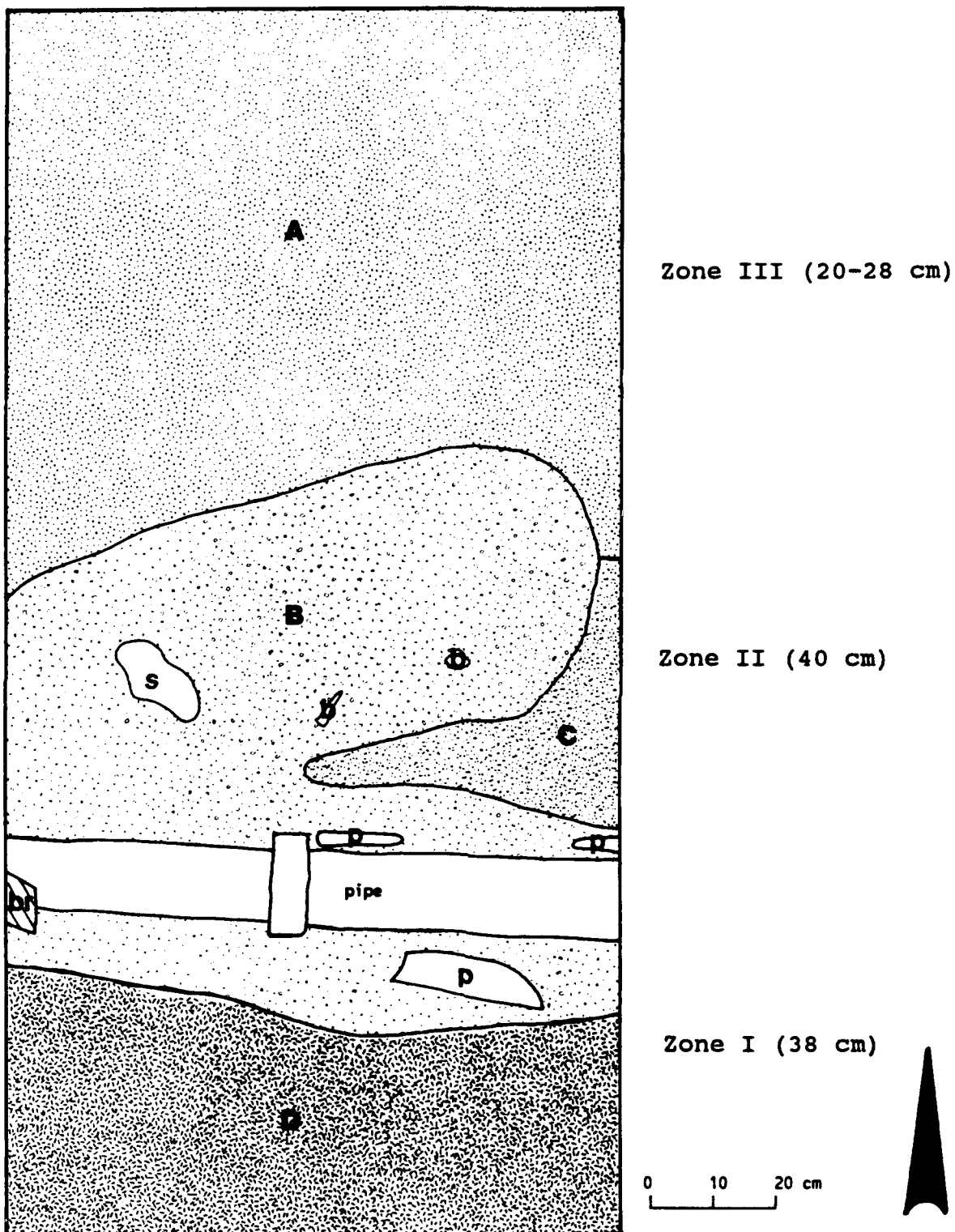


Figure 64. Plan of EU2 ext.

KEY TO FIGURE 64

- A 7.5YR 4/6 (strong brown) hardened daub
- B 10YR 4/2 (dark grayish brown) clayey silt with areas of 5YR 4/6 (yellowish red) silt.
- C 7.5YR 4/6 (strong brown) silt
- D 7.5 YR 4/2 (brown/dark brown) compact, friable silt
- b Bone
- br Brick
- p Pipe fragment
- s Dog skull

(strong brown) silt. As shown in Figure 63, the 5YR 4/6 (yellowish red) silt seen in Zone I and in EU2 proper did not overlie the strong brown silt to the north of the pipe trench.

Zone III Level 4 from approximately 23 to 30 cm below datum represented the removal of the hardened daub. Excavation demonstrated that there was in fact little or no soil in the level. Artifacts included creamware, pearlware, annular pearlware, whiteware, and porcelain.

The hardened daub graded into the 7.5YR 4/6 (strong brown) silt at about 30 cm below datum. The strong brown silt was then removed to the depth of 40 cm below datum, which represented the interface between the strong brown silt and the 7.5YR 4/2 (brown/dark brown) compact, friable silt. Artifacts consisted primarily of decorated and undecorated pearlware, although whitewares, porcelain, stoneware, and yellowware were also found. It should be noted that all of the sherds in this and the adjacent levels were very tiny. In addition, a stamped metal button was recovered. It is similar in appearance to brass stamped buttons which represented a minority type at Fort Fisher (1837-1865 [South 1964]).

Zone III was then excavated from 40 to 50 cm below datum along with the soils from Zone II north of the pipe trench. It should be noted that 50 cm represented the interface of the compact brown/dark brown silt with the underlying sterile 2.5Y 5/2 (grayish brown) silty clay (Figure 63). Ceramics included creamware, pearlware, whiteware, and porcelain. The most interesting artifact, however, was a tiny brass Masonic pin that was either lost during construction of the kiln, or possibly intentionally placed there. All artifacts were recovered from the upper few centimeters of the level.

Figures 63 and 65 illustrate the stratigraphy of EU2 ext. Comparison of the stratigraphy of the unit proper and the extension in Figure 63 show subtle changes across the north/south extent of the unit. In particular, it should be noted that the 5YR 4/6 (yellowish red) silt does not occur in the extension north of the pipe trench. This suggests that this trench destroyed the area where the yellowish red silt terminated. Also, the stratum of hardened daub was unique to the extension, although the underlying soils corresponded to those seen in the unit proper.

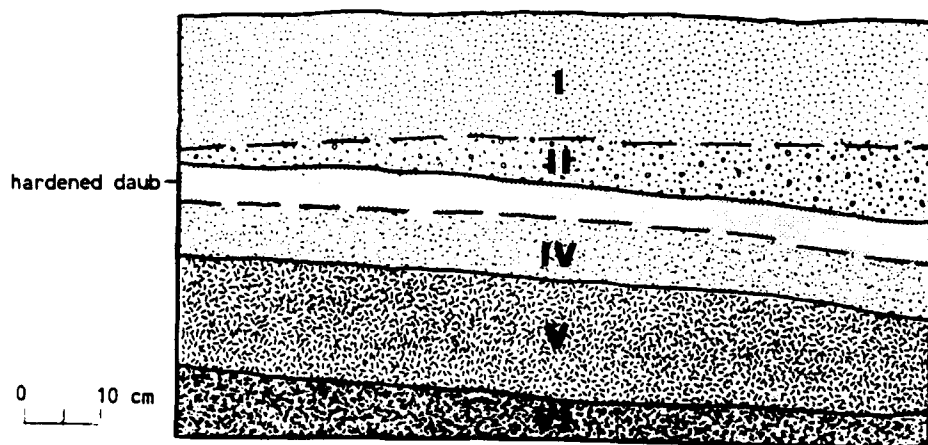


Figure 65. Profile of the north wall of EU2 ext.

KEY

Stratum I	10YR 3/2 (very dark grayish brown) clay loam
Stratum II	10YR 4/2 (dark grayish brown) clayey silt with 10YR 3/2 (very dark grayish brown) flecking and brick fragments
Stratum III	5YR 4/6 (yellowish red) silt with brick fragments
Stratum IV	7.5YR 4/6 (strong brown) silt
Stratum V	7.5 YR 4/2 (brown/dark brown) compact, friable silt
Stratum VI	2.5Y 5/2 (grayish brown) silty clay

Interpretation. The distinctive stratigraphy in this area combined with its location leaves little doubt that these features represent the remains of the kiln. Unfortunately, interpretations of how the kiln functioned are difficult given the limited nature of these excavations. Only complete excavation of the kiln and the immediate surrounding area can provide data for those interpretations. Several observations are worth noting, however, and these may facilitate more thorough investigations should data recovery become necessary.

As noted above, unusual brown and yellowish red soils were noted in shovel tests extending north/south at least from S32.5 to S35 and east/west at least from E30 to E35. In fact, this area represents only a very small portion of the area formerly occupied by the kiln. CAD-generated overlays of the 1869 plat (Figure 6) suggest that the kiln extended north/south from approximately S21 to S39, and east/west from about E20 to E37. Overlays for the ca. 1875 Braun map (Figure 9) indicate that it extended north/south from approximately S23 to S44 and east/west from approximately E21 to E42. This seems to indicate that the features discussed above were central to the kiln. It is difficult to say on the basis of shovel tests, however, whether similar soils are present from the remainder of the area formerly occupied by the kiln. It is possible that these strata are present at a depths greater than that reached by shovel tests. This possibility can only be confirmed or disproved by excavation of a larger area.

Alternatively, the brown and red soils are confined to the area noted and derive from a kiln-related feature of unknown function. The strata have the appearance of having been intentionally laid, particularly in the way that the linear feature in the unit proper and the adjacent line of bricks partition the different-colored silts (Figures 61 and 63). Similarly, the fact that the strong brown silt and the brown/dark brown silt layers are devoid of all but the smallest fragments of material suggest prepared soils. Unfortunately, they do not conform exactly to expectations generated from nineteenth-century accounts of brick making.

Prior to putting "green" (unfired) bricks in a kiln, the inside walls were plastered or daubed with mud to stop any cracks and to hold heat (Davis 1884 in Foster 1971:17). Also, the outside of the kiln was daubed to cover cracks during firing, which would produce even more lumps of hard-fired clay. It would be expected that large amounts of hard-fired daub would be

present as a result of these activities. Within EU2 and EU2 ext, however, daub was only found in the hardened surface in the northern 1/3 of EU2 ext. This area appeared to be a floor surface rather than daub fallen from the walls.

Historic accounts also indicate that either coal or wood was used for firing. The choice between these was related to availability and cost, wood often being scarce in some parts of the country (Davis 1884 in Foster 1971:18). The 1869 auction advertisement for the Jourdan Brickyard stated that lakeward areas had plenty of wood available for burning, so wood was probably used. Alternatively, if coal was used, then the remains of that fuel should be present.

Davis' 1884 discussion of brick-making (in Foster 1971:18) provides the following details concerning wood-burning and coal-burning kilns:

Brick-kilns requiring wood for fuel are flat in the bottom and paved with bricks; coal kilns have part of this pavement cut away under the portion which is to form the arch of the kiln, and the place filled with grates, and under each of the grates there is a trench dug all the way through the kiln, called the "ash-pit." A space at each side of the kiln is dug out to the depth of the ash-pits, the top covered with a slanting shed, and the space is called the "kiln-shelter," and serves as shelter for the laborers and fuel while the kiln of bricks is being burned. Before fire is placed in the coal kiln, the ashes made in burning the previous kiln of bricks are drawn out of the pits into the kiln shelter, thrown into wheelbarrows and carried out of the way, and after fire is started in the kiln the ashes are drawn each day (Davis 1884 in Foster 1971:18).

This description suggests that large amounts of cinder and unburned coal would be present in the vicinity of a coal-burning kiln. Table 11 presents the grams per cubic meter of excavated soil for charcoal, cinders, coal, and slag recovered from all four of the excavation units. As the table demonstrates, more of all four classes of material were removed from the privy excavated in EU4 and from the structure in EU3 (below) than from EU2 and EU2 ext. However, this may be an artifact of the location of EU2. As suggested by Davis'

Table 11. Weight in Grams per Cubic Meter of Excavated Soil of Charcoal, Cinders, Coal, and Slag from All Excavation Units.

	EU1	EU2	EU3	EU4
Charcoal	67.9	26.5	440.1	371.8
Cinders	103.6	230.5	1436.0	437.5
Coal	51.7	225.1	627.6	2627.6
Slag	502.8	2041.8	4045.7	3194.6

(in Foster 1971:18) statement that the ashes were drawn out each day, deposits of burned matter might be concentrated external to the kiln itself. Again, excavation over a larger area would be necessary to determine the type of fuel used in this kiln.

The above account also indicates that a wood-burning kiln probably had a solid brick floor. In contrast, a coal-burning kiln would have had pits beneath it which presumably were not bricked. Thus, the interior of a coal-burning kiln might exhibit more functionally-distinct areas, which would be archeologically recognizable through excavation of the entire interior.

Because fires were maintained within a brick kiln over a period of several days, the intense heat in the kiln should have fired and hardened the clayey soils in the vicinity of a kiln in the study area. This should be true even if the kiln had a solid brick floor because that floor would have transmitted much heat. It is likely that the layer of daub was formed as a result of exposure to kiln fires. The yellowish red and the brown silts also may have derived their color from heat exposure, although the former actually gave the appearance of pulverized brick. In particular, the presence of large amounts of brick fragments in this stratum suggests that this may in fact be the remains of a brick floor associated with the kiln and later removed. If this is the case, then the absence of the stratum from the northern two-thirds of EU2 ext would indicate that the floor of the kiln was only partially paved.

The 7.5YR 4/2 (brown/dark brown) compact silt is very distinct from the overlying 7.5YR 4/6 (strong brown) silts. This would not be expected if both were natural soils discolored as a result of heat exposure from a uniform source. Also, the presence of lost items, such as the Masonic pin, suggests that the deeper 7.5YR 4/2 compact silt was a prepared deposit.

The 1834 map does not depict a kiln in this location at that date (Figure 5), but it is present on the 1869 plat (Figure 9). As noted above, the most recent artifact recovered from the brown silts was a single sherd of ironstone. This artifact combined with the map data suggests that this kiln was constructed sometime between 1850 and 1869.

Insofar as the destruction/abandonment of the kiln is concerned, the 1896 Sanborn Insurance map (Figure 14) indicates that a residence extended partially over the kiln site by that date. Despite this, it is possible that some of the kiln features may still have been evident at the turn of the century. The feature filled with burned trash from EU2 in particular may have been related to the kiln itself. This is suggested by the pit's narrow diameter (ca. 50 cm) relative to its depth (15 to 88 cm below datum) as well as the pit's very straight walls. Automatically-manufactured bottles in the burned trash feature from EU2 indicate that this pit was filled subsequent to 1903. However, it is difficult to imagine this deep, narrow pit standing open for several years. Thus, despite the size and shape of the trash pit, it seems more likely that it was intrusive into the kiln. It should be noted that no evidence was recovered to suggest that the other semi-circular and circular features were not related to the kiln.

In summary, while some of the archeological expectations for the kiln remains were confirmed, other aspects of the kiln deposits cannot be easily explained using nineteenth century accounts. This may be the results of differences in tradition. The accounts examined for this study were English and Anglo-American, while the Jourdan Brickyard was owned and operated by a family of French descent. Given the limited excavation in this area relative to the former size of the kiln, it is likely that additional features are preserved that may elucidate the kiln's construction.

Excavation Unit 3

Excavation. The original purpose of Excavation Unit 3 (EU3) was to excavate a privy. In addition, since the first two excavation units were located in open areas, EU3 was intended to provide coverage within an occupied lot. Because shovel testing had not revealed deposits/features suggestive of a privy within an occupied lot, judgmental shovel and auger tests were excavated at the mapped locations of possible privies within Lot 2 of 16OR133.

Initially, auger tests were excavated at and in the vicinity of NO E2.7 in Lot 2 of 16OR133 (Figure 25). An outbuilding believed to be a privy was located here on the 1909 Sanborn Insurance map (Figure 20). All of the auger tests encountered sterile soil at approximately 30 cm below surface. Subsequently, the approximate location of a small, two-roomed outbuilding shown on the

1909 Sanborn (Figure 40) was tested using a soil probe and an Oakfield soil sampler. Probing revealed a line of solid contact at N3.5 E9.7. A shovel test at N3.3 E9 recovered glass, slate, mortar, porcelain, and brick to about 45 cm below surface. A second shovel test at N3.5 E9.7 revealed laid brick at approximately 40 cm below surface.

EU3 was then laid in to further expose the laid brick. It was a 1 x 1 m unit with the southeast corner (unit datum) located at N2.8 E9.6. This placed the shovel test at N3.5 E9.7 on the eastern wall of the unit, while the shovel test at N3.3 E9 was within the unit. Excavation was by arbitrary levels.

Level 1 extended from 0 to 25 cm below datum; the purpose of this level was to rapidly remove the overburden above the cultural deposits. While relatively modern material was collected, such as a plastic comb fragment and a plastic threaded bottle cap, late-nineteenth/early twentieth-century material was also recovered. Ceramics consisted primarily of ironstone, although one sherd of gold banded porcelain and one sherd of mocha yellowware were also collected. One sherd of classic ironstone had a backmark of Arthur J. Wilkinson of Burslem, England, which dated to the period 1885 to 1896 (Godden 1964:672). Other artifacts included a glass marble, a ceramic marble, a kaolin pipestem, bisque doll fragments, and tumbler fragments. One soda/water bottle sherd was embossed "...& M. CO. / ... ROYAL ST." An increase in artifacts, brick fragments, and coal was noted at 25 cm below datum.

A layer of metal, cinders, and some oyster shell was present at the top of Level 2 (25 to 35 cm). A thin lens of charcoal extended across the entire unit at about 26 cm below datum. Materials collected from Level 2 included ironstone, one sherd of finger-painted pearlware, ceramic buttons (post-1840), mosquito bar rings, and large amounts of bone. No diagnostic glass was collected.

Courses of laid brick were uncovered in the south, east, and west walls of the unit during excavation of Level 2. Fragments of mortar adhering to the brick in the east wall indicated that the bricks had originally been plastered (Figure 66). In addition, mortared brick which had evidently fallen from the east profile was uncovered during excavation of Level 2 (Figure 67).

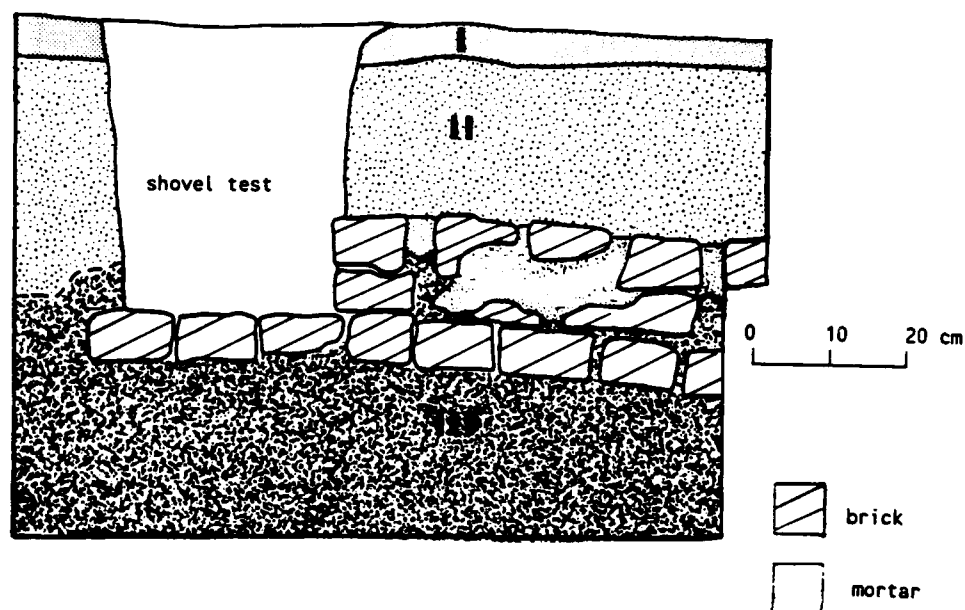


Figure 66. Profile of the east wall of EU3.

KEY

Stratum I	Humus
Stratum II	10YR 3/2 (very dark grayish brown) clay loam
Stratum III	2.5Y 5/2 (grayish brown) silty clay

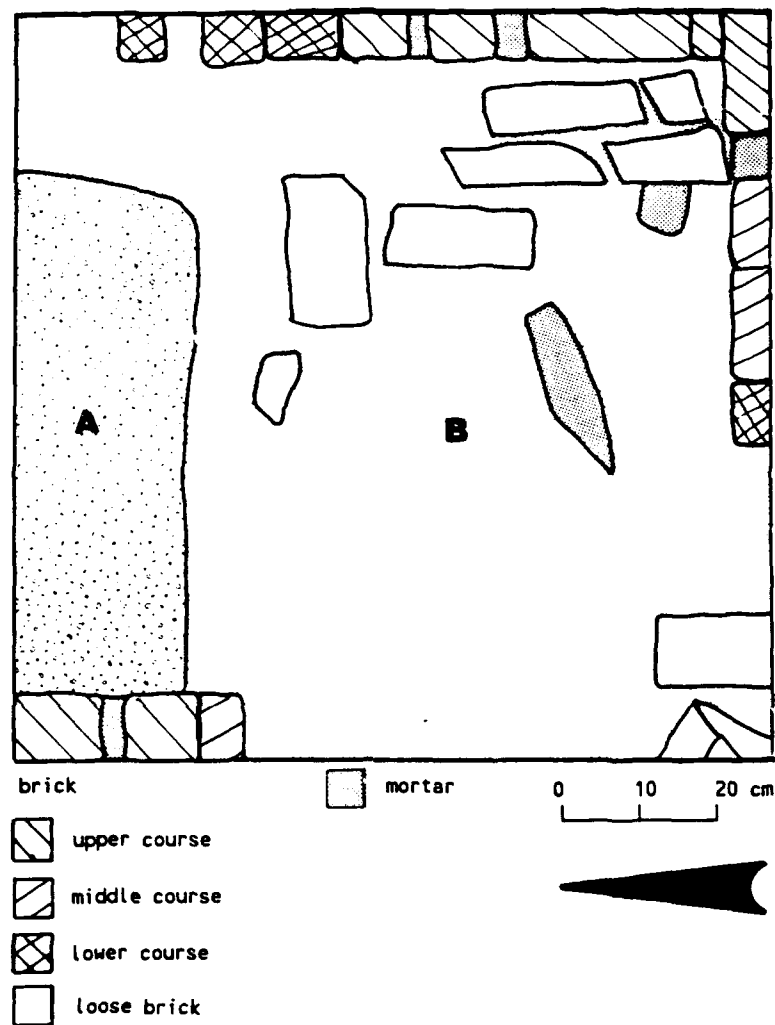


Figure 67. Plan of EU3 at 45 cm below datum.

KEY

- A Charcoal concentration in a 10YR 3/1 (very dark gray) silty clay matrix
- B 10YR 5/2 (grayish brown) sandy mortar

Architectural debris, particularly large fragments of mortar and of brick, increased in the uppermost few centimeters of Level 3 (35-45 cm). Large amounts of metal were also collected, but there were few ceramics (one sherd of ironstone and two sherds of porcelain). A mosquito bar ring and a ceramic marble were found, as was an earthenware figurine foot which appeared to be unfired. Fragments of two Philadelphia oval flasks were collected. A bottle neck manufactured by an automatic bottle machine provided a terminus post quem of 1903 for the level.

A layer of 10YR 5/2 (grayish brown) sandy mortar extended across almost the entire unit at 45 cm below datum. This also appeared to be the bottom of the lowest course of bricks, indicating that this was the floor of the structure. Thus the bricks present in the south and east walls of the unit were only three courses at their maximum height (Figures 66 and 67). The fallen brick in the unit, however, indicates that the brick formerly extended to at least five courses. The number of courses that might have been formerly present above the surface is, of course, unknown.

In addition, a rectangular concentration of charcoal in a 10YR 3/1 (very dark gray) silty clay matrix was present in the northern portion of the unit at 45 cm below datum (Figure 67). This lens of charcoal was only a few centimeters thick, as was the mortar which covered the remainder of the floor. By approximately 47 cm below datum in Level 4 (45-55 cm), both the charcoal concentration and the sandy mortar had been removed, and the soil was a sterile 2.5Y 5/2 (grayish brown) silty clay. It should be noted, however, that a bottle neck with a crown cap (post-1890) was recovered from above the sterile silty clay.

A two-liter soil sample from Level 4 was processed according to the flotation techniques described in Chapter 8. The sample yielded nine seeds of elderberry (*Sambucus*). Although the presence of these seeds could be accidental, it is also possible that they represent dietary remains. Elderberry is a common plant in southeastern Louisiana, and is used to make wine and other beverages. The sample also yielded 6.7 grams of carbonized pine (*Pinus*) and 0.4 grams of oak (*Quercus*).

Figures 66, 68, and 69 illustrate the east, south, and north profiles of EU3. The south and east profiles illustrate the majority of the remains of the laid brick

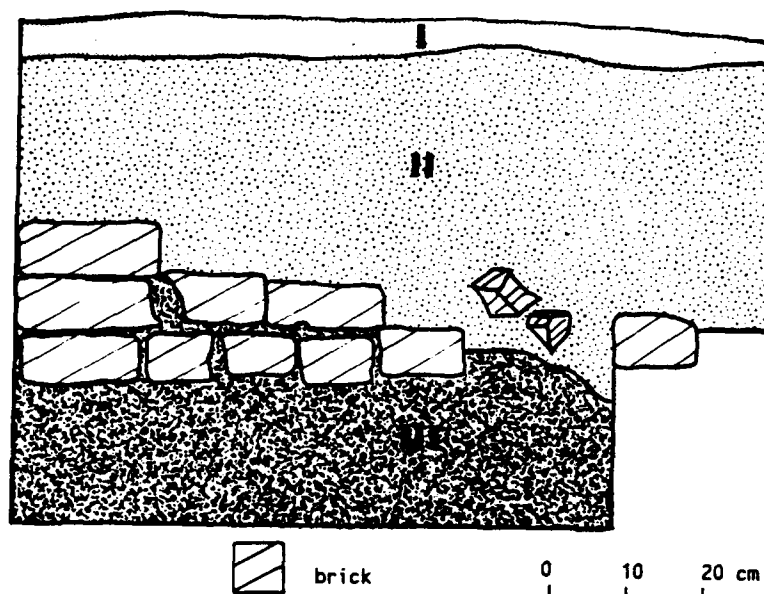


Figure 68. Profile of the south wall of EU3.

KEY

Stratum I	Humus
Stratum II	10YR 3/2 (very dark grayish brown) clay loam
Stratum III	2.5Y 5/2 (grayish brown) silty clay

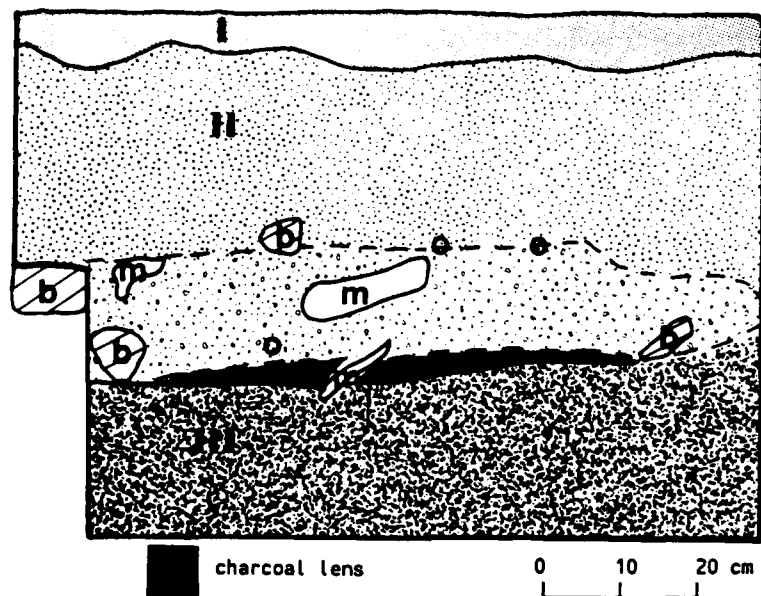


Figure 69. Profile of the north wall of EU3.

KEY

Stratum I	Humus
Stratum II	10YR 3/2 (very dark grayish brown) clay loam
Stratum IIa	10YR 3/2 (very dark grayish brown) clay loam with abundant artifacts and charcoal
Stratum III	2.5Y 5/2 (grayish brown) silty clay
b	Brick
m	Metal
o	Oyster shell

recovered within the unit; only two courses were preserved in the west profile in the northwest corner of the unit (Figure 67). All three profiles illustrate that the uppermost 5 to 10 cm was humus topsoil. Below this was a 10YR 3/2 (very dark grayish brown) clay loam. The artifact concentration was only visible in the profile of the north wall (Figure 69); this concentration corresponds to the depth of the bricks in the south and east profiles (Figures 66 and 68). The sterile 2.5Y 5/2 (grayish brown) silty clay appeared below the bricks in the south and the east profiles and below the charcoal concentration in the north profile. The unit was terminated following the excavation of Level 5 (55-70 cm).

Interpretation. The function of the structure discovered in EU3 is uncertain. As noted above, the brick feature was thought to correspond to a small, two-room outbuilding shown on the 1909 Sanborn (Figure 20). CAD-generated overlays of the site map and the historic structure do not provide an exact fit, and the mapped structure is shown as slightly larger than what was recovered in the unit. Nonetheless, it is likely that these are the same structure. Map evidence indicates that this building was removed by 1937 (Figure 24). This is consistent with a terminus post quem of 1903 for the material recovered from within the structure and a terminus post quem of 1890 for the floor of the structure. The brick still extant within the profiles of the unit show that the walls were only one brick in width, so this was clearly not a weight-bearing foundation. Thus, it is likely that the superstructure was wood frame.

As stated previously, it was hoped that this structure was a privy. This seems unlikely for several reasons. The artifact density for the unit as a whole was relatively low, although near-empty privies are not unheard of (cf. Bryant 1986). Of greater concern is the shallow depth of the floor of the former structure (45 cm below datum). The New Orleans Board of Health ordered the emptying within 48 hours of any privy vault filled within one foot of the surface (Shugg 1968:285-286), which would have allowed little space for privy fill within this structure. Then too, the walls of the structure were evidently robbed of brick. It seems unlikely that anyone would undertake the unpleasant task of dismantling the walls of a privy for brick.

The recovery of large amounts of charcoal, cinders, and slag relative to the other units and the presence of

the rectangular charcoal lens prompted speculation that the feature was the foundation for a smokehouse. The small size of the structure (1 meter width) seems to preclude this possibility; presumably a smokehouse would have been somewhat larger.

The most likely possibility is that this was some sort of a multi-purpose shed. However, this solution does not address the presence of the charcoal lens. Only excavation of a much larger sample of features associated with former outbuildings within the study area would provide comparative data necessary for interpreting the functions of the buildings. For instance, it is possible that this is in fact a very shallow privy, the superstructure for which was elevated. Location in a semi-rural neighborhood with truck farms nearby might have allowed privies with such a design. It should be noted also that privies in Alexandria, Virginia, associated with lower socioeconomic contexts could only rarely be located. The explanation is that privies in those contexts were relatively shallow or perhaps not excavated at all (Shepard 1985).

Excavation Unit 4

Excavation. Because EU3 did not result in the excavation of a deep privy, additional probing and augering was undertaken in Square 189 (16OR131) in an effort to identify a privy and thus determine the placement of Excavation Unit 4 (EU4). A row of probable privies was identified on the 1909 Sanborn map at the rear of the lots fronting on Dauphine Street (Figure 18). The privy shown closest to Jourdan Avenue was also present on the 1896 Sanborn map (Figure 15). It was located to the rear of a combined residence and store.

The approximate location of this privy was determined by its position relative to existing structures in Squares 190 and 232, utilizing CAD-generated overlays of historic and present-day maps. Probing in the vicinity of S35 W6.5 revealed solid contacts to depths of 60 cm below surface. An auger test here recovered glass at 65 cm below surface and white coarse sand at 85 cm below surface. EU4 was therefore laid in as a 1 x 1 m unit with its southwest corner (unit datum) at S35 W7. Excavation was by 20 cm arbitrary levels with the exception of Levels 2 and Levels 5 through 9, which were only 10 cm in depth.

Level 1 (0-20 cm) included a mixture of both modern debris (such as numerous fiberglass fragments) and historic material (such as classic ironstone sherds), but primarily consisted of dense rubble in a 10YR 3/1 (very dark gray) clay loam matrix. This rubble included gravel, slag, brick, mortar, coal, concrete fragments, and Rangia, and presumably served as a cap to seal the privy. The quantity of this rubble was so great that it was only sampled rather than collected in its entirety.

With the exception of a concentration of Rangia in the center of the unit, the majority of the very dense rubble was removed by the top of Level 2 (20-30 cm). However, considerable amounts of rubble were still present within Level 2. At 30 cm below datum there was an increase in the quantities of ceramics, nails, slate, charcoal, and bone, while the rubble virtually disappeared.

Level 2 therefore included the uppermost privy fill. Artifacts collected included ceramic buttons (post-1840), ceramic shirt studs, a fork, a button hook, and a mosquito bar ring. Ceramics consisted of late-nineteenth/early twentieth century ironstone (both plain and decorated) and porcelain (both hard paste and soft paste), as well as English majolica (post-1851), brownware, and yellowware. Diagnostic glass included late-nineteenth/early-twentieth-century tooled pharmaceutical bottle necks.

There was an increase in both the quantity and the size of the collected material in Level 3 (30-50 cm). As was the case with Level 2, ceramics were late-nineteenth/early-twentieth century ironstones and porcelains. Decorative treatments on these wares included embossing, decalcomania, and gilding. Additional sherds of the English majolica vessel noted in Level II were collected. In addition, none of the diagnostic bottle glass collected in the level was produced by an automatic bottle machine. Two complete pharmaceutical bottles were collected, as well as a tiny perfume bottle embossed "HOYT'S / NICKEL / COLOGNE." F. Hoyt & Co. were Philadelphia perfumers who operated at least during the 1870 to 1890 time period (Wilson 1981:71).

Other glass included a cordial goblet (minus the stem), condiment jar fragments, soda bottle fragments, pressed glass, lamp glass, and fragments of a seltzer maker. Etching on the seltzer maker suggests that it was probably made by the Consumer's Seltzer & Mineral

Water Manufacturing Co. of New Orleans (New Orleans Antique Bottle Club 1981:64). One soda bottle fragment was embossed "WORLD / BOTTLING WORKS / (NEW) ORLEANS, L(A)" which was located at 435 Spain Street (New Orleans Antique Bottle Club 1981:68). Other artifacts included ceramic marbles, slate pencils, ceramic buttons, a brass button, a ceramic shirt stud, an eyelet, a pair of scissors, a corroded medallion, and an eye glass lens. Glass beads, from either jewelry or clothing, were recovered from the 1/4", 1/8" and 1/16" mesh during nested water-screening of soil from Level 3.

Similar material was collected from Level 4 (50-70 cm) but in greater quantities. Four complete turn-molded wine bottles were collected, and fragments of several other similar bottles were found. One clear, plain oval flask bore the ca. 1900 to 1916 mark of the Illinois Glass Co., of Alton, Illinois, as did a brown Baltimore oval flask (Toulouse 1971:264). One small cylindrical bottle was embossed "SAMPLE BOTTLE / DR. KILMER'S / SWAMP-ROOT / KIDNEY CURE / BINGHAMTON, NY." A similar bottle recovered from Fort Laramie, Wyoming, was dated to the period 1885-1890 (Wilson 1981:55), but such bottles may date as late as 1918 (Denver 1968:53 in Hahn 1986:B-31). A fragment of a Hostetter's bitters bottle was collected, as were jars and jar fragments, pressed glass, lamp glass, a variety of pharmaceutical bottles and bottle fragments, and additional fragments of the seltzer maker recovered in the previous level. Two sample liquor bottles were found. These were embossed "PAUL (illeg.) / PURE RYE / LOUISVILLE, KY." Another bottle was embossed "AGUA PURGANTE / F. Serre / RUBINAT." The origin and dates of these three bottles have not been identified. Fragments of a pickle/preserve jar were also recovered. These were embossed "JK&S / W," which suggests manufacture by John Kilner & Sons of Wakefield, England. Unfortunately, it is unclear how long this plant was in operation, although Toulouse (1971:279-280) indicates that it may have been as long as 1844 to the 1920s. Finally, an automatically-manufactured jar was recovered, indicating that the privy was open until at least 1903. However, the paucity of automatically-produced bottles within the privy in general suggests that it was probably sealed within the first decade of the twentieth century.

Ceramics in Level 4 were similar to those collected in Level 3, and fragments of the same vessels were found in both. One sherd had the 1893-1932 period backmark of Baker & Co., Ltd. of Staffordshire, England. In

addition, fragments of a relict vessel were recovered: three sherds of an annular whiteware bowl.

Large amounts of corroded metal were present in Level 4. Most of this appeared to derive from cans, but these were in such a poor state of preservation that they could not be removed whole. Other artifacts included ceramic buttons, shoe leather (including the heel of a child's shoe), an eye glass lens which matched the one collected in Level 3, lamp and lampshade fragments, a woodstove burner cover, an enameled cooking pot, and an upholstery button. Beads were recovered during water-screening from the 1/8" and 1/16" mesh. Toiletry articles included bone toothbrush fragments and fragments of a bone shaving brush. In addition to the child's heel, other evidence of children in the household included metal toy fragments, doll dishes, and fragments of a large cast bisque doll.

A glazed, ceramic drainage pipe with its mouth opening into the privy was first noted during removal of Level 3 and was completely exposed during excavation of Level 4. The pipe evidently served as an overflow outlet for the privy, and presumably emptied into the ditch along Jourdan Avenue. Wood fragments were noted directly in front of the mouth of the pipe in Level 3, as well as within the mouth of the pipe. Wood fragments were in fact found throughout the privy fill in Levels 3 and 4. It is unlikely that this was the remains of the privy lining since it was so randomly distributed throughout the fill.

A two-liter soil sample from Level 4 was processed according to the flotation methods described in Chapter 8. The sample yielded 13 grams of carbonized pine (*Pinus*) and 1.3 grams of oak (*Quercus*).

At 70 cm below datum artifact density decreased in the southern portion of the unit. Also, fragments of sandy mortar were noted in the southwest corner at this depth. However, a concentration of pane glass and bottle glass was present at 70 cm in the northeast corner of the unit. The bottom of the privy was reached at approximately 75 cm below datum in Level 5 (70-80 cm). The floor of the privy was marked by a layer of 10YR 8/2 (white) coarse sand which contained brick fragments and sand concretions.

Despite the relatively thin extent of the privy deposit in Level 5, a variety of whole and nearly-whole bottles were collected. It appeared that more of the

bottles were fragmentary than was the case in Level 4. These included olive turn-molded wine and wine sample bottles, pharmaceutical bottles, liquor bottles, a cone ink bottle, pressed glass, and lamp glass. A milk glass patch box was collected, as were two automatically-manufactured milk glass ointment jars. One clear Philadelphia oval pharmaceutical bottle was embossed "AMERICAN / DRUGSTORE / 1115 / CANAL ST. / N.O." and dated to the period ca. 1890 through 1910 (New Orleans Antique Bottle Club 1981:18). One brown liquor bottle was embossed "ABGM Co." on the base. This was the ca. 1886 to 1928 mark of the Adolphus Busch Glass Manufacturing Co. of Bellville, Illinois.

Insofar as ceramics are concerned, Level 5 yielded ironstones, porcelains, and brownwares similar to those collected in the previous levels. In addition, a fragment of a transitional pearlware/whiteware plate with blue transfer-printed decoration was collected. One sherd of an ironstone plate bore the post-1906 mark of John Maddock & Sons of Burslem, England (Godden 1964:406). Other artifacts included the remainder of the bone shaving brush, a toy flat-iron, bisque figurine fragments, a caster, and an eating utensil handle.

Very little was collected from Level 6 (80-90 cm), which represented the removal of the white coarse sand at the base of the privy. A sherd of classic ironstone, shell, clear glass, slate, and brick fragments were all recovered from within the sand layer. The sand extended to approximately 85 cm below datum, and the soil beneath it was a 2.5Y 5/2 (grayish brown) silty clay with iron oxide mottling. Level 7 (90-105 cm) was essentially sterile.

Because of the concentration of glass located in the northeast corner of the unit proper, the unit was expanded to the east and to the north. The initial expansion, extension 1 (ext1), was a 1 x 1.5 meter extension placed adjacent to the east wall of EU4 proper. The long axis of the extension was oriented north/south. The south walls of both the unit and the extension were contiguous; thus the north wall of the extension was located .5 m north on the grid from the north wall of the unit proper. Extension 2 (ext2) was a .5 x 1 m extension with its long axis oriented east/west. The south wall of ext2 abutted the north wall of EU4 proper, and the east wall of ext2 was adjacent to the northern .5 m of the west wall of ext1. Thus, the configuration of the unit with extensions upon completion was 2 x 1.5 m, with the long axis oriented

east/west. Excavation levels were the same as those used in the unit proper.

Level 1 of ext1 (0-20 cm) was very similar to Level 1 of the unit proper in terms of concentrations of rubble and artifacts collected. One unusual item was a fragment of a cut-glass decanter. Ceramics consisted of ironstones and porcelains, although two sherds of blue shell-edged pearlware were also collected. Additional fragments of fiberglass were found, along with ceramic buttons, a pipestem, a keyhole cover, and a clock back.

During the removal of Level 2 (20-30 cm), three separate features were identified in ext1 (Figure 70). The first of these was an oblong area of 10YR 4/2 (dark grayish brown) silty clay which turned out to be an intrusive dog burial. The second area, located in the southern 1/3 of the unit, consisted of a mixed 10YR 4/2 (dark grayish brown) clayey silt and 10YR 5/2 (grayish brown) clayey silt, which represented the trench for the pipe into the privy (above). The third area was the privy fill itself, which was a 10YR 3/2 clay loam. The privy pit itself only extended partially into ext 1.

In addition, two courses of laid brick were noted in the eastern wall of the extension (Figure 70). The lower course consisted of stretchers and was stepped out from the upper course 3 cm. The upper course consisted of headers laid on edge. The lower course lay directly on the 10YR 5/2 (grayish brown) clayey silt (Figure 71).

The purpose of this small foundation is uncertain. No structures other than the privy are shown in this location on the historic maps. Its size indicates that it was not a weight-bearing foundation. It is possible that it supported the privy superstructure. This suggestion is supported by the presence of an apparently flanking foundation noted in Shovel Test S35 W10 (above).

The decision was made to excavate only the pipe trench fill and the privy fill below Level 3. The fill from the pipe trench was removed as a unit from 30 to 60 cm below datum. Unfortunately, the pipe trench was devoid of diagnostic ceramics and glass. However, one ca. 1890s 38-caliber short cartridge was found. This suggests that the pipe trench was laid and the privy was built in the 1890s. This is in fact consistent with the historic map evidence for the privy, which shows that it was present by 1896 (Figure 15).

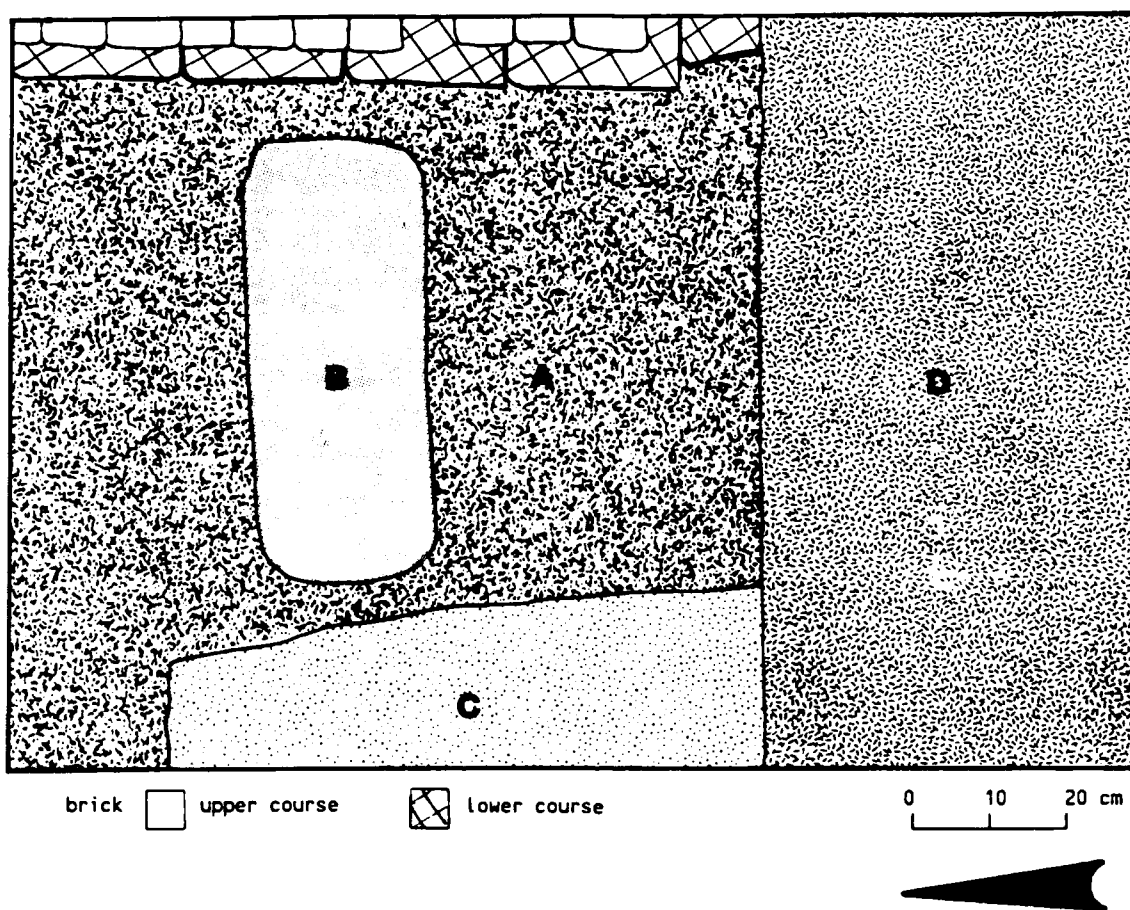


Figure 70. Plan of EU4 ext1 at 30 cm below datum.

KEY

- A 10YR 5/2 (grayish brown) clayey silt
- B 10YR 4/2 (dark grayish brown) silty clay (dog burial)
- C 10YR 3/2 (very dark grayish brown) clay loam (privy fill)
- D 10YR 4/2 (dark grayish brown) clayey silt mixed with 10YR 5/2 (grayish brown) clayey silt (pipe trench)

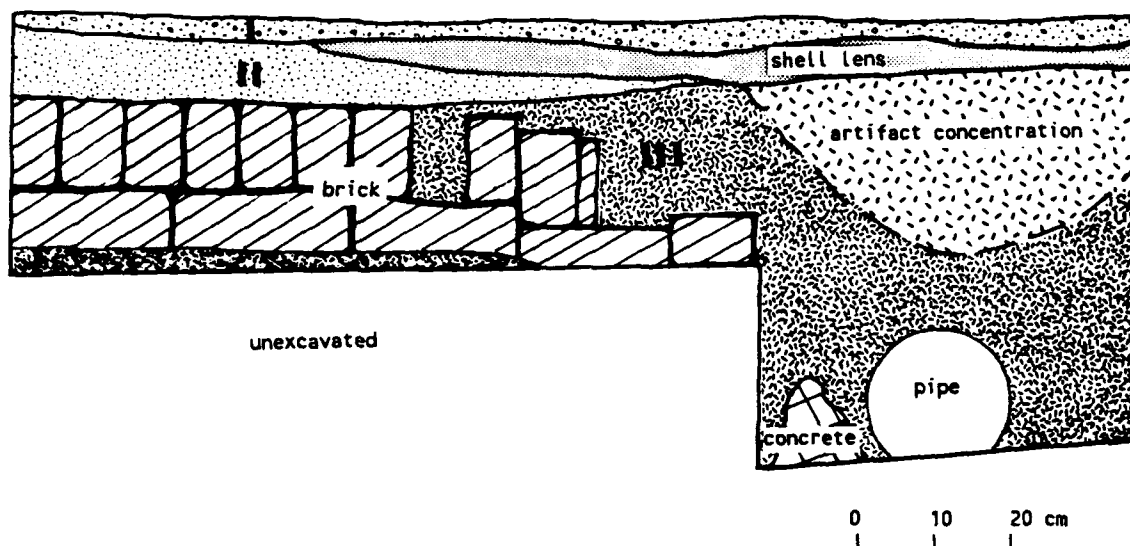


Figure 71. Profile of the east wall of EU4 ext1.

KEY

Stratum I	10YR 6/4 (light yellowish brown) sand mixed with 10YR 3/2 (very dark grayish brown) clay loam
Stratum II	10YR 3/1 (very dark gray) clay loam
Stratum III	10YR 3/2 (very dark grayish brown) clayey silt with 10YR 4/2 (dark grayish brown) mottling
Stratum IV	10YR 5/2 (grayish brown) clayey silt

Excavation of the pipe trench also revealed construction details of the privy. Specifically, cement was found at the interface of the privy pit and pipe trench. Evidently cement was utilized to seal the area around the pipe.

Levels 3 through 5 of the privy fill in ext1 yielded similar artifacts to those collected in the unit proper. Specifically, whole bottles and bottle glass were collected along with lesser amounts of table glass, lamp glass, pane glass, and ceramics. Ceramic marbles, ceramic buttons, and doll's dishes all were collected. As was the case with the unit proper, diagnostic material dated to about the turn of the century.

It should also be noted that the amount of material in terms of numbers of artifacts collected decreased with depth because the walls of the privy pit sloped inward with increasing depth, thereby decreasing the volume of fill. Figure 72 illustrates the south wall of EU4 and Eu4 ext1. With the exception of the *Rangia* shell lens at the interface of Strata I and II in EU4 ext1, the natural strata in EU4 are similar to the natural strata seen in EU1, EU2, and EU3. However, the privy fill is very distinct. The privy is capped by a lens of *Rangia* shell, beneath which is a 10YR 3/2 (very dark grayish brown) clay loam containing charcoal and artifacts. Artifact density increased with depth, as did iron oxide staining. The soil graded to a 2.5Y 5/2 (grayish brown) silty clay with depth, but the artifact density did not decrease. It might also be noted that the odor of excrement was noticeable in this layer of the privy fill. The floor of the privy was marked by the coarse, 10YR 8/2 (white) sand.

Extension 2 encompassed the north wall of the privy pit. Again, dense rubble and mixed modern and historic refuse were encountered in Level 1 (0-20). In addition, a brown, turn-molded mineral water bottle was collected. It was embossed "C.L. KEPPLER / MINERAL WATER / MANUFACTORY / NEW ORLEANS" (New Orleans Antique Bottle Club 1981:66). Ironstones, porcelains, and brownwares comprised most of the ceramics. A variety of buttons and shirt studs were collected, as well as utensil handles and a modern pipestem.

One of the more interesting artifacts from Level 2 (20-30 cm) of ext2 was a tiny, embossed metal case, that appears to have been a matchbox from a chatelaine. Fragments of tortoiseshell were collected, as were an eyelet, a ceramic button, and a child's jack. The

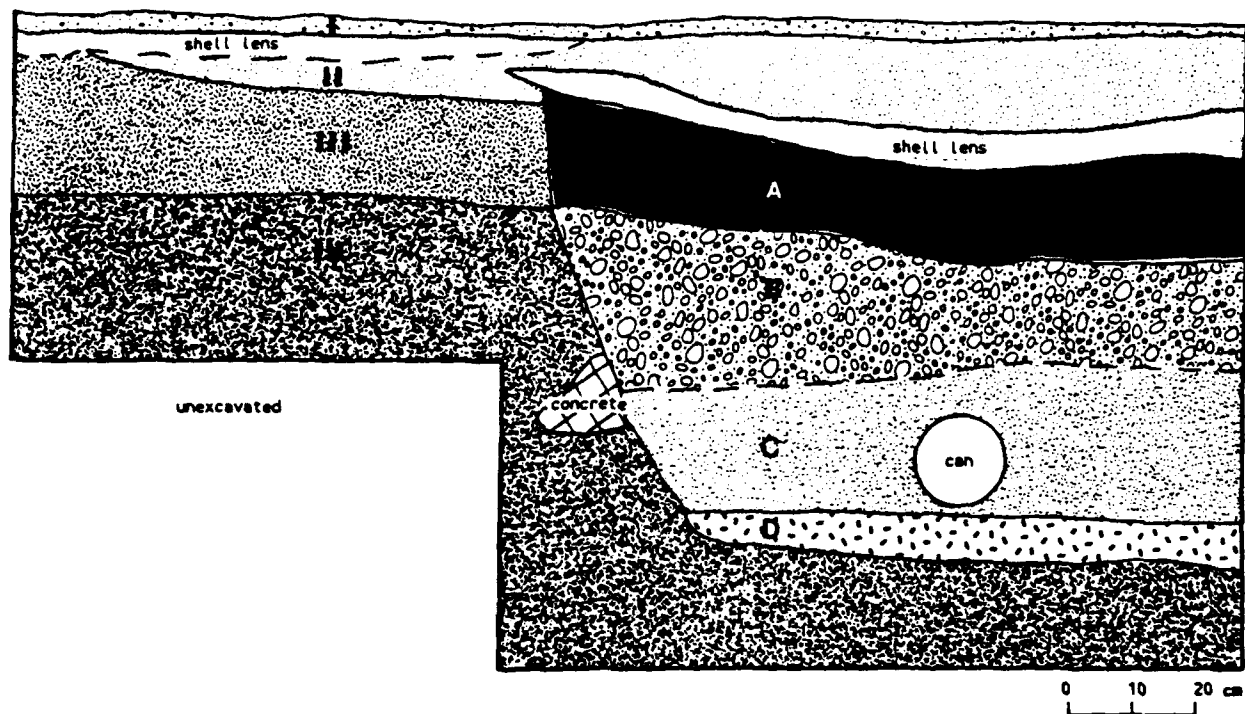


Figure 72. Profile of the south wall of EU4 and EU4 ext1.

KEY TO FIGURE 72

Stratum I	10YR 6/4 (light yellowish brown) sand mixed with 10YR 3/2 (very dark grayish brown) clay loam
Stratum II	10YR 3/1 (very dark gray) clay loam
Stratum III	10YR 3/2 (very dark grayish brown) clayey silt with 10YR 4/2 (dark grayish brown) mottling
Stratum IV	10YR 5/2 (grayish brown) clayey silt grading to a 2.5Y 5/2 (grayish brown) silty clay with depth
Privy Fill:	
A	10YR 3/2 (very dark grayish brown) clay loam with charcoal and artifacts
B	10YR 3/2 (very dark grayish brown) clay loam with dense artifacts, iron oxide staining, and charcoal
C	2.5Y 5/2 (grayish brown) silty clay with dense artifacts, iron oxide staining, and charcoal
D	10YR 8/2 (white) sand with brick fragments and sand concretions

majority of ceramics were ironstone and porcelain, and both bottle and table glass was collected. In addition, both crimped and pearl top lamp glass was found.

Level 3 (30-50 cm) of ext2 yielded an ironstone fragment with a ca. 1900 mark from the D.E. McNichol Pottery Company of East Liverpool, Ohio (Gates and Omerod 1982:186). Other ceramics from this level included porcelains, brownware, rockinghamware, and stoneware. Bottle glass included a fragment from either the City Bottling Co., which operated during the period 1893 to 1906 (Hahn 1986:B20), or the City Bottling Works of New Orleans (New Orleans Antique Bottle Club 1981:69). A second fragment was embossed "H L / NEW O(RLEANS) / T__." Finally, pennies dated 1888 and 1900 were found.

Several whole bottles were collected in Level 4 (50-70) of ext2. These included two mineral water bottles marked "SAXLEHNER'S / HUNYADI / JANOS / BITTERQUELLE." These were the product of Andreas Saxlehner of Budapest, Hungary, in the period 1863 to about 1900 (Toulouse 1971:257). A second brown liquor bottle was embossed "THE DUFFY MALT WHISKEY COMPANY / ROCHESTER, N.Y. USA" on the front and "PAT^D AUG 24 / 1886" (Fountain and Colcleaser 1969:117). This product was advertised during the period 1887 to 1899 (Wilson 1981:132). One unidentified bottle was embossed "HIRSCH'S / WORCESTER SAUCE" on the front and back and "HIRSCH BROTHER'S & Co." and "PITTSBURGH PA & LOUISVILLE KY" on the sides. Other glass included pharmaceutical bottles, wine bottles, ink bottles, jars, table glass, and lamp glass. Relatively few ceramics were collected, but a classic ironstone shaving mug bore the Knowles, Taylor, and Knowles backmark dating to the 1878-1885 period (Gates and Omerod 1982:117). Finally, an enamelled cooking pot was found; it was encrusted with burned debris. It appeared that someone burned dinner and threw it, pot and all, into the privy!

Additional diagnostic bottles and bottle fragments were collected in Level 5 (70-80 cm) of ext2. One perfume bottle was embossed "COLGATE & CO / PERFUMERS / NEW YORK" and dates to the 1870 to 1890 period (Wilson 1981:71). Refitted fragments of a light green paneled flask read "DR. PIERCE'S / FAVORITE / PRESCRIPTION" on the front and "BUFFALO, NY" and "RV PIERCE, MD" on the sides. Advertisements for this patent remedy are found between 1875 and 1894 (Wilson 1981:139). In addition, several New Orleans bottles were found. One clear flask was embossed "J. A. Legendre / Pharmacist [in script] /

NEW ORLEANS." Legendre evidently operated on the corner of Dauphine and Customhouse Streets (New Orleans Antique Bottle Club 1981:26). Another clear bottle was marked "COUSIN'S / PHARMACY / NEW / ORLEANS," which was located at Dumaine and Claiborne (New Orleans Antique Bottle Club 1981:20). An amethyst paneled flask was embossed "SHEROUSE MEDICINE CO. / NEW ORLEANS" on the front and "BRONCHODA" on both sides. Another unidentified aqua plain oval flask read "FELLOWS & CO / CHEMISTS / ST JOHN N.B." Finally, pieces of another seltzer maker were removed from the west wall of ext2 in Level 5. These were etched "COMPANY / C / N.O." on the side and "MATTHEWS APPARATUS CO / NEW YORK" on the base.

Interpretation. As the above discussion illustrates, artifacts from the privy date very tightly to the turn of the century. The most recent chronologically diagnostic artifact collected was the post-1906 ironstone sherd from Level 5 (the base of the privy shaft) of the unit proper. Thus, the privy was open at least through 1906. The 1909 Sanborn Map in fact suggests that the associated superstructure was present at least until this date. However, the Sanborn maps may not be reliable in this regard because some privy sheds are still shown on the 1980 version of the map. As noted previously, the fact that very few automatically-manufactured bottles were collected does seem to suggest that the privy pit may have been infilled in the first decade of the twentieth century, although there was "a long period of transition" during which machine and hand manufacture were both utilized (Toulouse 1969:541). Nonetheless, the New Orleans city sewerage system was considered completed in 1908 (Jackson 1961:124-125), and the remains in the privy suggest that this household, at least, may have been connected to the city system shortly thereafter.

The material was uniformly distributed throughout the privy, and there were no sterile levels noted during excavation. Artifact density was the lowest in Level 3 of the unit and the extensions, while Levels 4 and 5 both contained dense artifact deposits. The major distinction between Levels 4 and 5 was that the bottles tended to be more fragmentary in the latter, which is not surprising considering the process of deposition. In addition, the material gave no indication of temporal stratification (cf. the latest diagnostic artifact was found at the base of the shaft). Rather, the material seems to have been deposited continuously over a relatively brief period of time. It is probable that at least the dense debris in Levels 4 and 5 were deposited

during the use-life of the privy (cf. Bryant 1986:K/16-K/18). The distinctive odor of the soils in these levels would seem to support this.

Most interesting is the construction of the privy. As noted above, wood fragments were found within the privy fill. However, excavation of the east and north walls of the privy shaft provided no indication that the privy had been wood-lined. Evidently the shaft was a simple, excavated pit, as the south wall profile indicates (Figure 72). This was contrary to the city ordinances, which subsequent to 1857 required that privies be walled with brick (Leovy and Luzenberg 1870:181). Despite this ordinance, wood-lined privies continued to be constructed into the 1870s (Bryant 1986:K-6). On the basis of its contents, the privy excavated in EU4 probably post-dates even the 1877 ordinance requiring privies to be lined in brick or stone, yet it appeared to be completely unlined. In addition, it had an overflow pipe which probably emptied into an open ditch along Jourdan Avenue. This suggests that enforcement of health regulations were lax in this semi-rural neighborhood.

Alternatively, this may have been a much older privy shaft. The ca. 1875 Braun map (Figure 10) shows that a structure was located at the corner of Jourdan and Dauphine when the plan was drawn. Although a privy is not shown behind the house, one probably was present. If the EU4 privy construction dated to the 1870s, then either negligible amounts of refuse were deposited in the privy during the initial period of use, or the privy was entirely cleaned out sometime around the turn of the century. The privy shaft could have been cleaned and the overflow pipe installed in the 1890s. This is not to say that items collected from the privy do not or can not date as far back as the 1870s, but post-1900 material was found at the bottom of the shaft.

Finally, it should be noted that the size of the units precluded excavation of the entire privy. The shaft's extent to the south and to the west was not determined. However, artifacts were removed from the south and the west walls of the unit prior to backfilling. This process indicated that the shaft extended at least 40 cm to the south and at least 60 cm to the west.

CHAPTER 10 ARTIFACT ANALYSIS

Franks and Yakubik (1991:200-262) suggested a series of hypotheses that might be testable in the study area, as well as analytic tools for the testing of these hypotheses. Application of their recommended functional classification and tableware decorative scale is presented below. The purpose of these analyses was to develop preliminary assessments of the utility and workability of these techniques for addressing research issues concerning the material reflection of socioeconomic status.

Artifacts from all of the excavation units were utilized for analyses. Artifacts from EU3 and EU4 obviously were associated with the residents at 829/831 Jourdan and 4736 Dauphine, respectively. In addition, CAD-generated overlays of the field map with historic maps indicate that EU1 was located in the backyard of what was 4825 Chartres, while EU2 was located in the rear of 4827 Chartres. Early-twentieth-century trash pits were found in both of these units. Thus, although the primary intent of EU1 and EU2 was to obtain data on the antebellum/brickyard component of 16OR130, archeological information was also obtained on the former residents of these lots.

U.S. Census records indicate that in 1900 the occupants of 4736 Dauphine were a white laborer and his wife, who ran a notions store at this address. By 1910 a white shipping clerk and his family lived here. The residence at 829/831 Jourdan was probably occupied by a single African-American family from at least 1880 to 1910. In 1880 a laborer was the head-of-household here, but in both 1900 and 1910 there was a carpenter in the family. In addition, women in the household worked in both 1880 and 1900. The white superintendent of a saw mill lived at 4825 Chartres in 1900, and by 1910 a white bar-keeper lived there. The children in both of these families were educated, and the superintendent's family had a resident servant. The head-of-household at 4827 Chartres was a white laborer in 1910.

Utilizing the occupational rankings developed by Hershberg et al. (1973), and modified for the study area by Franks and Yakubik (1991:212-214), both the 1900 and 1910 residents of 4825 Chartres ranked in the second-highest category, as did the residents at 4736 Dauphine in 1910. Although a laborer lived at this latter address in 1900, his wife was a proprietress, suggesting

that they too should be ranked in the middle group. While the ca. 1880 African-American laborer at 829/831 Jourdan would have ranked in the lowest category, as did the white laborer at 4827 Chartres, the fact that a carpenter resided at 829/831 Jourdan in 1900 and 1910 is more relevant for analytic purposes given the date of the deposits in EU3. Table 12 presents a summary list of the address, the occupational rankings and the racial composition for the location of each excavation unit.

It should be noted that the possibility exists that the excavated deposits do not derive from the residents of the lots on which they stood. Trash pits can be excavated in a the yard of a vacant house; an entire neighborhood can contribute to the infilling of an abandoned privy (cf. Bryant 1986). However, the assumption that the remains can be related to an individual household is necessary in order to pursue any meaningful analyses.

Minimum Number of Vessel Estimates

In addition to the classification of ceramics and glass presented in Chapter 8, minimum numbers of vessels within each of the excavation units were estimated for both categories. There are several advantages to this technique. First, it provides a more realistic idea of the amount of material actually represented in a deposit. A single plate may break into dozens of sherds, but the sherds still represent only one item. Similarly, utilizing minimum vessel estimates rather than sherd counts serves to equalize categories somewhat when undertaking functional analyses. Functional classifications generally are notoriously over-weighted toward "kitchen" artifacts, which most ceramics and glass represent.

In addition, because whole vessels were recovered in the units and particularly in EU4, minimum vessel estimates tend to equalize within-category comparisons. For example, a whole whiskey bottle and several fragments of a single wine bottle are collected from a hypothetical unit. If numbers of pieces are utilized for the purposes of frequency calculation, one might come to the erroneous conclusion that wine was preferred over whiskey. Finally, minimum numbers of vessels proved to be the most reasonable means of calculating the numbers of ceramics of different decorative categories (below).

Table 12. Summary of Occupational Rankings* of Residents Associated with Individual Excavation Units for the Period 1900 to 1910 (after Hershberg et al. 1973).

Unit	Address	Occupational Ranking*	Race
EU1	4825 Chartres	Category III	White
EU2	4827 Chartres	Category V	White
EU3	829/831 Jourdan	Category III	African-American
EU4	4734/4736 Dauphine	Category II/III	White

*Refer to Table 36 for Occupational Ranking definitions.

Minimum number of vessel estimates are presented in Tables 13 to 17. It should be noted that these estimates were all calculated without vessel reconstruction. Such reconstruction was beyond the scope of this project. It undoubtedly would have increased the accuracy of the estimates, and reconstruction would have increased the number of vessels identifiable as to former function.

Despite the fact that sample sizes are small, examination of Table 17 reveals some interesting patterns. EU2, which was associated with the lowest ranked household, contained far more jars than did EU1 and EU4, which were associated with middle rank households. In addition, EU2 yielded fewer wine and pharmaceutical bottles than did the other two units. These observations conform to reasonable expectations; it is not surprising that a poorer family would have less access to wine and pharmaceutical products and place a greater emphasis on canning and preserving of foods. It should also be noted that the fact that jars produced especially for canning as well as jars for commercial products were included in this category does not affect the conclusion. Reuse of commercial jars for home canning was a very common practice.

The difference in apparent wine consumption is also interesting. Castille et al. (1986:7/13) predicted that "lower status households" would have a lower consumption of wine than "higher status" and French Creole households. In fact they found that proportions of wine bottle fragments were similar in lower and middle status archeological features, although there appeared to be a tendency for the use of more costly wines in middle status households. However, Castille et al. (1986) utilized identified bottle fragments rather than minimum vessel counts in their analysis. It is possible that the results may have been different had the minimum number of vessels been estimated.

Analysis of Ceramic Tableware

Classification of body type. As noted in Chapter 8, classification of late-nineteenth/early-twentieth century white earthenwares is problematic. Therefore, Franks and Yakubik (1991:205) recommended the use of the term "refined white earthenware" to categorize all late-nineteenth/early-twentieth-century non-vitreous and semi-vitreous ceramics. The one exception was classic ironstone, which is a readily distinguishable type. Therefore, it was recommended that it be classified

Table 13. Minimum Number Ceramic Vessels, EU1, 16OR130.

	Plate	Bowl	Cup	Saucer	Chamber pot	Storage vessel	Pitcher	Unident.	Total
Creamware	1	1			1				3
Mocha creamware								1	1
Pearlware	2				1				3
Blue hand-painted pearlware								1	2
Polychrome hand- painted pearlware		2	1					2	5
Green shell-edged pearlware	3								3
Blue shell-edged pearlware	4								4
Blue edged pearlware	1								1
Annular pearlware		5					1	2	8
Trailed-slip annular pearlware		1							1
Finger-painted pearlware		2						2	4
Mocha pearlware								1	1
Blue transfer- printed pearlware	5		1					3	9
Shell-edged embossed pearlware-glazed									
white-colored earthenware	1								1
Whiteware	1	1							3
Polychrome hand- painted whiteware								1	3
Annular whiteware		1		1				2	3
Blue shell-edged whiteware	2								2

Table 13. Minimum Number Ceramic Vessels, EU1, 16OR130.

	Plate	Bowl	Cup	Saucer	Chamber pot	Storage vessel	Pitcher	Unident.	Total
Black transfer- printed whiteware	1								1
Blue transfer- printed whiteware	1						1		2
Mulberry transfer- printed whiteware	1								1
Red transfer-printed whiteware	1						1		2
Sponged whiteware							1		1
Classic ironstone	3		1		3				7
Ironstone	2				1		3		6
Oblong embossed classic ironstone		1							1
Mulberry transfer- printed ironstone							1		1
"Tea leaf" ironstone					1				1
Porcelain					1				2
Embossed porcelain					1				1
Decaled porcelain					1		1		2
Blue hand-painted porcelain					1		1		2
Soft paste porcelain							1		1
Blue chelsea							1		1
Parian							1		1
Lead-glazed redware							3		3
Lead-glazed redware, eroded glaze							1		1
Flecked Lead-Glazed Redware							1		2

Table 13. Minimum Number Ceramic Vessels, EU1, 16OR130.

	Plate	Bowl	Cup	Saucer	Chamber pot	Storage vessel	Pitcher	Unident.	Total
Brown-Glazed Redware							1		1
Spanish olive jar						1			1
Lead-glazed pink earthenware							1		1
Yellowware		1					1		2
Annular yellowware		1					1		1
Mocha yellowware		1					1		2
Grey salt-glazed stoneware							1		1
Grey salt-glazed stoneware, albany-slipped interior							2		2
TOTAL	29	18	4	10	2	1	1	40	105

Table 14. Minimum Number Ceramic Vessels, EU2, 16OR130.

	Plate	Bowl	Cup	Saucer	Chamber pot	Serving bowl	Pitcher
Creamware	1				1		
Pearlware					1		
Polychrome hand- painted pearlware							
Blue shell-edged pearlware	6						
Blue edged pearlware							
Annular pearlware		1					1
Finger-painted pearlware							
Mocha pearlware							
Blue transfer- printed pearlware	2	1	1	1			
Annular whiteware		1					
Blue transfer- printed whiteware							
Mulberry transfer- printed whiteware							
Red transfer-printed whiteware	1	1					
Banded whiteware	1						
Classic ironstone	2	1	2			1	1
Ironstone	1		1	2			
Embossed ironstone	2	1					
Flow blue and gilded embossed ironstone							

Table 14. Minimum Number Ceramic Vessels, EU2, 16OR130.

	Plate	Bowl	Cup	Saucer	Chamber	Serving	Pitcher
					pot		bowl
Embossed and decaled ironstone							1
Polychrome hand- painted ironstone							
Porcelaneous stoneware							
Smear-glazed porcelaneous stoneware							
Green transfer- printed porcelaneous stoneware							
Porcelain	1						
Embossed porcelain	1						
Blue transfer- printed porcelain			1				
Overglaze black transfer-printed porcelain						1	
Decaled porcelain							
Polychrome over- glaze hand-painted porcelain			1				
Parian							
Unglazed redware							

Table 14. Minimum Number Ceramic Vessels, EU2, 16OR130.

	Plate	Bowl	Cup	Saucer	Chamber	Serving	Pitcher
					pot	bowl	
Green-Glazed Redware							
Yellowware		2					
Annular yellowware		1					
Bristol-glazed							
brownware, albany-							
slipped interior							
English majolica							
Grey salt-glazed							
stoneware							
Stoneware bottle							
TOTAL	18	9	6	4	3	1	2

Table 14. Minimum Number Ceramic Vessels, EU2, 16OR130.

	Bottle	Platter	Small plate	Crock	Unident.	Total
Creamware				2		4
Pearlware						1
Polychrome hand- painted pearlware				1		1
Blue shell-edged pearlware						6
Blue edged pearlware				1		1
Annular pearlware						2
Finger-painted pearlware				2		2
Mocha pearlware				1		1
Blue transfer- printed pearlware				2		7
Annular whiteware				1		2
Blue transfer- printed whiteware				2		2
Mulberry transfer- printed whiteware				1		1
Red transfer-printed whiteware				1		3
Banded whiteware						1
Classic ironstone	1					8
Ironstone				1		5
Embossed ironstone				1		4
Flow blue and gilded embossed ironstone			1			1

Table 14. Minimum Number Ceramic Vessels, EU2, 16OR130.

	Bottle	Platter	Small plate	Crock	Unident.	Total
Embossed and decaled ironstone						1
Polychrome hand- painted ironstone			1			1
Porcelaneous stoneware			1			1
Smear-glazed porcelaneous stoneware			1			1
Green transfer- printed porcelaneous stoneware						1
Porcelain						1
Embossed porcelain			1			2
Blue transfer- printed porcelain						1
Overglaze black transfer-printed porcelain						1
Decaled porcelain			1			1
Polychrome over- glaze hand-painted porcelain						1
Parian			1			1
Unglazed redware			1			1

Table 14. Minimum Number Ceramic Vessels, EU2, 16OR130.

	Bottle	Platter	Small plate	Crock	Unident.	Total
Green-Glazed Redware						1
Yellowware				1		1
Annular yellowware				2		4
Bristol-glazed						1
brownware, albany- slipped interior				1		1
English majolica				1		1
Grey salt-glazed						
stoneware				1		1
Stoneware bottle	2					2
TOTAL	2	1	1	1	29	77

Table 15. Minimum Number Ceramic Vessels, EU3, 16OR133.

	Plate	Bowl	Cup	Saucer	Large bowl	Flower pot	Pitcher
Finger-painted pearlware		1					
Classic ironstone	1		1	1	1		
Ironstone	1		1				
Embossed ironstone	1			2			
Embossed pink ironstone		1					
Decaled ironstone	1						
Embossed and decaled ironstone				1			
Porcelain				1			
Embossed porcelain				1			
Gold banded porcelain	1						
Polychrome over-glaze hand-painted porcelain							1
Soft paste porcelain							
Terra cotta flowerpot						1	
Rockinghamware		1					
Mocha yellowware							
Late spatter					1		
Bristol-glazed brownware							
TOTAL	5	3	2	5	2	1	1

Table 15. Minimum Number Ceramic Vessels, EU3, 16OR133.

	Serving bowl	Unident.	Total
Finger-painted pearlware			1
Classic ironstone			4
Ironstone	1		3
Embossed ironstone			3
Embossed pink ironstone			1
Decaled ironstone		3	4
Embossed and decaled ironstone			1
Porcelain		1	1
Embossed porcelain			1
Gold banded porcelain			1
Polychrome over- glaze hand-painted porcelain			1
Soft paste porcelain		1	1
Terra cotta flowerpot			1
Rockinghamware		1	2
Mocha yellowware		1	1
Late spatter			1
Bristol-glazed brownware		1	1
TOTAL	1	8	28

Table 16. Minimum Number Ceramic Vessels, EU4, 16OR131.

	Plate	Bowl	Cup	Saucer	Lid	Flower pot	Pitcher	Large bowl
Blue shell-edged pearlware	1							
Blue transfer- printed pearlware- glazed white- colored earthenware	1							
Annular whiteware		1						1
Classic ironstone	2	2	3	1	1		1	1
Ironstone	6	2		5				
Modern ironstone								
Oblong embossed classic ironstone	1			1				
Embossed ironstone	6	1						
Brown transfer- printed ironstone			1					
Brown transfer- printed and hand- painted ironstone	1							
Flow blue ironstone	1			1				
Embossed and transfer-printed ironstone								1
Decaled ironstone	1		2	1				
Embossed and decaled ironstone			1	1				
Banded ironstone	1							
Porcelaneous stoneware								

Table 16. Minimum Number Ceramic Vessels, EU4, 16OR131.

	Plate	Bowl	Cup	Saucer	Lid	Flower pot	Pitcher	Large bowl
Brown-glazed porcelaneous stoneware	1							
Porcelain			2	1	1			
Porcelain, colored glaze								
Embossed porcelain			3	1				
Gilded and embossed porcelain			3	2				
Decaled porcelain	1							
Embossed and decaled porcelain			1					
Embossed, decaled & gilded porcelain								
Overglaze spattered porcelain				1				
Polychrome over- glaze hand-painted porcelain								
Polychrome hand- painted soft paste porcelain			2					
Unglazed redware				1				
Terra cotta flowerpot						1		
Salt-glazed redware								
albany-slipped interior							1	
Rockinghamware								1
Yellowware								1

Table 16. Minimum Number Ceramic Vessels, EU4, 16OR131.

	Plate	Bowl	Cup	Saucer	Lid	Flower pot	Pitcher	Large bowl
Brownware								
Brownware, unglazed exterior								1
Bristol-glazed brownware, albany- slipped interior								
English majolica								
Grey salt-glazed stoneware, albany- slipped interior								
Grey salt-glazed stoneware, brown exterior slip								
Grey salt-glazed stoneware, brown exterior slip, albany-slipped interior								
Stoneware bottle								

	22	7	18	16	2	1	2	5
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TOTAL

Table 16. Minimum Number Ceramic Vessels, EU4, 16OR131.

	Bottle	Platter	Chamber pot	Dish	Crock	Tile	Shaving mug	Unident.	Total
Blue shell-edged pearlware									1
Blue transfer- printed pearlware- glazed white- colored earthenware									1 2 13 13
Annular whiteware							1		
Classic ironstone	1								
Ironstone									
Modern ironstone									
Oblong embossed classic ironstone			1					1	4
Embossed ironstone									7
Brown transfer- printed ironstone									1
Brown transfer- printed and hand- painted ironstone									
Flow blue ironstone							1		1
Embossed and transfer-printed ironstone									3
Decaled ironstone									1
Embossed and decaled ironstone							1		5
Banded ironstone									2
Porcelaneous stoneware									1
							2		2

Table 16. Minimum Number Ceramic Vessels, EU4, 16OR131.

	Bottle	Platter	Chamber pot	Dish	Crock	Tile	Shaving mug	Unident.	Total
Brown-glazed porcelaneous stoneware									1 6
Porcelain							2		
Porcelain, colored glaze							1		1 4
Embossed porcelain									5
Gilded and embossed porcelain									1
Decaled porcelain									2
Embossed and decaled porcelain				1					
Embossed, decaled & gilded porcelain				1					1
Overglaze spattered porcelain									1
Polychrome over- glaze hand-painted porcelain									2
Polychrome hand- painted soft paste porcelain									1 1
Unglazed redware						1			
Terra cotta flowerpot									1
Salt-glazed redware albany-slipped interior								1	1 1 1
Rockinghamware Yellowware									

Table 16. Minimum Number Ceramic Vessels, EU4, 16OR131.

	Bottle	Platter	Chamber pot	Dish	Crock	Tile	Shaving mug	Unident.	Total
Brownware					1			3	4
Brownware, unglazed exterior									1
Bristol-glazed brownware, albany- slipped interior								1	1
English majolica								1	1
Grey salt-glazed stoneware, albany- slipped interior								2	2
Grey salt-glazed stoneware, brown exterior slip								1	1
Grey salt-glazed stoneware, brown exterior slip, albany-slipped interior								1	1
Stoneware bottle	2								2
TOTAL	2	1	1	1	2	1	1	18	100

Table 17. Minimum Number of Glass Vessels from
Excavation Units.

	EU1	%	EU2	%	EU3	%	EU4	%
Beer	1	4.3						
Bitters	1	4.3	2	3.4	1	12.5	1	0.6
Condiment	1	4.3	1	1.7			5	2.9
Cosmetic	2	8.7	2	3.4			9	5.2
Ink	1	4.3	3	5.1			4	2.3
Jars	2	8.7	26	44.1			17	9.8
Liquor			3	5.1			25	14.4
Pharmaceutical	5	21.7	5	8.5	2	2.5	46	26.4
Soda/water	2	8.7	3	5.1	2	2.5	11	6.3
Table glass	5	21.7	12	20.3	2	2.5	34	19.5
Wine	3	13.0	2	3.4	1	12.5	22	12.6
TOTAL IDENT.	23		59		8		174	
UNIDENTIFIED	3		21		5		19	

separately from other white earthenwares. Instead, the classes whiteware, classic ironstone, ironstone, and modern ironstone were utilized herein (Chapter 8). The reason for this is that it was chronologically useful to distinguish non-vitreous undecorated whitewares, which potentially date to the antebellum period, and the later semi-vitreous ironstones. This was particularly true within the non-occupied areas of 16OR130 and 16OR131. Ultimately these divisions did not create any classificatory difficulties.

Classification of decoration. Late-nineteenth/early-twentieth-century tableware decoration was described as recommended in Franks and Yakubik (1991:206). This included embossing or relief decoration, transfer-printing, gilding, hand-painting, and decaling as well as any combination of these techniques (Appendix II). The resulting types were compatible with suggested price-level rankings presented by Franks and Yakubik (1991:206-211).

Ceramic pricing. Franks and Yakubik (1991:207) suggested that the Holy Cross area might provide a context in which to examine economic/status implications of ceramic tableware decoration in the late-nineteenth/early-twentieth century. Ceramic retail prices in the 1908 and 1909 Sears catalogues (Schroder 1969:349-356, Ventura Books 1979:120-126) were utilized to develop a pricing hierarchy for broad decorative categories (Tables 18 and 19). Franks and Yakubik (1991:211) suggested that this would provide a starting point for price level comparisons, and that the scale might be adjusted as necessary.

It should be noted that since the completion of the research design for the area, Miller (1991) has presented a revised set of index values for economic scaling (cf. Miller 1980). However, these values terminate in 1880. Because the deposition of the majority of the material recovered during excavations appears to be at least ca. 1900, use of Miller's (1980, 1991) scale was not possible. However, if sufficient pre-1880 material is collected in the event of archeological mitigation, this technique should certainly be employed.

Because of the propensity for decoration to be localized on the rims of late-nineteenth/early-twentieth-century ceramic vessels, it was suggested that rim sherds be segregated for analytical purposes (Franks and Yakubik 1991:206). In the course of analysis,

Table 18. Price Ranges for Decorative Categories
 Illustrated in the 1908 and 1909 Sears Catalogues
 (Schroder 1969:349-356; Ventura Books 1979:120-126).

	<u>Decorative Category</u>	<u>Price Range</u>
Refined White Earthen- ware	Embossed	\$3.98-\$7.65
	Embossed with Monochrome Decoration	\$5.98-\$6.98
	Embossed with Monochrome Decoration and Gilding	\$6.75
	Embossed with Polychrome Decoration	\$7.48-\$10.98
	Embossed with Polychrome Decoration and Gilding	\$7.98-\$11.90
	Embossed with Gilding	\$8.98-\$11.75
	Porcelain (all decorative categories)	\$12.95-\$31.98

Table 19. Suggested Price Level Rankings for Analysis of Late-Nineteenth/Early-Twentieth-Century Ceramics Based on Price Ranges Provided by the 1908 and 1909 Sears Catalogues (Schroder 1969:349-356; Ventura Books 1979:120-126).

	<u>Decorative Category</u>	<u>Price Range</u>
Refined White Earthen- ware	Undecorated	none available
	Embossed	\$3.98-\$7.65
	Monochrome Decoration, with or without Gilding	\$5.98-\$6.98
	Polychrome Decoration, with or without Gilding, or Gilding alone	\$7.48-\$11.90
	Porcelain (all decorative categories)	\$12.95-\$31.98

however, it became apparent that this was unworkable. Decorated body sherds lacking corresponding rim sherds were present in the collection and thus were unrepresented for the purpose of analysis. Therefore, minimum numbers of vessels were utilized. It should be added that antebellum ceramics collected from EU1 and EU2 were excluded from analysis in order to minimize "noise" from the brickyard/quarters component.

It was expected that the assemblage from EU2 would have the highest percentage of low-priced ceramics, and that those from EU1 and EU4 would have the most porcelain. The chi-square was utilized to determine if a significant difference in the frequencies of the various price-level categories existed between the assemblages. As Table 20 demonstrates, however, there was no significant difference between the assemblages using the price-levels suggested by Franks and Yakubik (1991:Table 11).

Miller (1980:4) noted that at the time of its ca. 1850 introduction, undecorated ironstone was priced the same as transfer-printed wares, which were the highest priced ceramics at that date. Therefore, classic ironstone was removed from the undecorated category, placed in its own category, and chi-square was recalculated. Table 21 indicates that again, the differences were not statistically significant.

Franks and Yakubik (1991:211) noted that the placement of undecorated porcelain was problematic because no pricing data were available. Accordingly, the frequencies were recalculated with undecorated porcelains shifted to the undecorated group, and chi-square was recalculated. Again no significant difference was found (Table 22).

The apparent homogeneity of the ceramic assemblages using the price levels suggested by Franks and Yakubik (1991:Table 11) should not suggest that these levels are flawed and should be abandoned. First, the sample sizes were very small for three of the units and very marginally adequate in the fourth. Consequently, the results may be due to sampling error. The technique should be employed on larger samples before it is rejected.

Alternatively, the results may be accurately reflecting ceramics as a socioeconomic indicator within these four assemblages. Three of the assemblages were associated with households ranking in the second and

Table 20. Chi Square Comparing Ceramic Price Level Rankings Proposed in Franks and Yakubik (1991:Table 11).

	EU1	EU2	EU3	EU4	N
Undecorated	13 (9.82)	15 (12.68)	7 (8.59)	28 (31.91)	63
Embossed	1 (3.12)	4 (4.03)	4 (2.73)	11 (10.13)	20
Monochrome or Polychrome*	2 (4.05)	4 (5.23)	5 (3.55)	15 (13.17)	26
Porcelain	8 (7.01)	8 (9.06)	5 (6.14)	24 (22.79)	45
Total	24	31	21	78	154

$$\chi^2 = 7.053$$

$$\text{Prob.} = .6316$$

*Monochrome and polychrome decorated vessels had to be combined to increase sample sizes.

Table 21. Chi Square Comparing Ceramic Price Level Rankings With Classic Ironstone Separated.

	EU1	EU2	EU3	EU4	N
Ironstone	7 (4.99)	8 (6.44)	4 (4.36)	13 (16.21)	32
Undecorated	6 (4.83)	7 (6.24)	3 (4.23)	15 (15.70)	31
Embossed	1 (3.12)	4 (4.03)	4 (2.73)	11 (10.13)	20
Monochrome or Polychrome*	2 (4.05)	4 (5.23)	5 (3.55)	15 (13.17)	26
Porcelain	8 (7.01)	8 (9.06)	5 (6.14)	24 (22.79)	45
Total	24	31	21	78	154

$$\chi^2 = 7.345$$

$$\text{Prob.} = .8340$$

*Monochrome and polychrome decorated vessels had to be combined to increase sample sizes.

Table 22. Chi Square Comparing Ceramic Price Level Rankings With Undecorated Porcelain Placed in the Undecorated Category and Classic Ironstone Separated.

	EU1	EU2	EU3	EU4	N
Ironstone	7 (4.99)	8 (6.44)	4 (4.36)	13 (16.21)	32
Undecorated	8 (6.55)	9 (8.45)	4 (5.73)	21 (21.27)	42
Embossed	1 (3.12)	4 (4.03)	4 (2.73)	11 (10.13)	20
Monochrome or Polychrome*	2 (4.05)	4 (5.23)	5 (3.55)	15 (13.17)	26
Decorated Porcelain	6 (5.30)	6 (6.84)	4 (4.64)	18 (17.22)	34
Total	24	31	20	78	154

$$\chi^2 = 7.345$$

$$\text{Prob.} = .8340$$

*Monochrome and polychrome decorated vessels had to be combined to increase sample sizes.

third highest groups, while only one was associated with the lowest group. It is not really surprising that households in Categories II and III have similar assemblages, although the fact that one of these three is an African-American household is particularly interesting. The assemblage from EU2, which is associated with a Category V household, may be idiosyncratically middle-level in appearance. Thus, the sample size in terms of the number of assemblages examined may also be too small.

Another possibility is that differences in ceramics between low and middle income households at this date were insignificant, while only the very wealthy utilized distinctive types. In this regard, it should be noted that very fine tablewares end up in antique stores with far greater frequency than in archeological contexts. This alone may obscure socioeconomically-based differences in ceramic assemblages. Finally, the fact that reconstruction was not undertaken may also be affecting the results, in that undecorated vessels may in fact be under-represented in the minimum vessel counts. It is therefore recommended that these price-levels be re-examined with additional data should archeological mitigation be necessary.

Ceramic Pricing within the Antebellum Component. Although ceramic pricing is problematic for the late-nineteenth century, Miller's (1980) price levels are valid within antebellum contexts. Relative frequencies of Miller's (1980) four pricing levels (undecorated, minimally decorated, hand-painted, and transfer-printed) were calculated for the antebellum material (cream-colored earthenwares, whitewares and classic ironstone) from EU1 and EU2 in order to try to characterize the brickyard workers' material culture. Classic ironstone was grouped with transfer-printed wares for this calculation.

Table 23 presents the results. Both units had very high percentages of undecorated sherds. The lowest two categories comprised 72% of the analyzed material from EU1 and 60% of the material from EU2. Of the material in the highest category from EU2, 62% of it was classic ironstone, at least some of which undoubtedly postdates the brickyard. Thus, the material collected from both units is consistent with a low socioeconomic context.

Examination of Ceramic Variety. Franks and Yakubik (1991:261) suggested that one method of examining socioeconomic differences between households in Holy

Table 23. Ceramic Price Level Frequencies for Antebellum Material from EU1 and EU2.

	EU1		EU2	
	n	%	n	%
Undecorated	150	54.15	80	44.69
Minimal Decoration	50	18.1	29	16.2
Hand-Painted	20	7.2	1	.6
Transfer-Printed & Ironstone	57	20.6	69	38.5
Total	277		179	

Cross was comparing assemblages for the presence of matched sets of tableware. It was hypothesized that the higher the socioeconomic status of the household as indicated by male occupations, the greater the tendency for matched sets of tableware. No clear evidence of matched sets of tableware was noted in any of the excavated assemblages, but the lack of vessel reconstruction makes this issue problematic. Should archeological mitigation be necessary, ceramic analysis should include vessel reconstruction.

In lieu of the identification of matched sets, the issue of ceramic variety may also be addressed by examination of the number of different ceramic decorative types present in an assemblage. Therefore, the numbers of decorative types of tableware were counted for the collections from each excavation unit. Cream-colored earthenwares and whitewares were excluded from the counts in all cases in order to minimize the "noise" from the antebellum components at 16OR130 and 16OR131. The results suggested that at least in these cases, variety was correlated with sample size. EU3 had the smallest number of types (7) and the smallest ceramic assemblage (n=48), and EU4 the largest number of types (21) and the largest assemblage (n=661). EU1 (n=345) and EU2 (n=278) both had nine decorative types. However, the utility of this technique should be re-examined with samples of relatively equal size from like contexts.

Finally, ceramic variety was examined in terms of vessel form. It might be expected that households with higher socioeconomic statuses would possess a variety of specialized functional types of ceramic vessel, while lower status households might utilize the same vessel for multiple functions. Table 24 presents a summary of the ceramic table and kitchen ware. As was the case in the consideration of decorative type, cream-colored earthenwares and whitewares were excluded. Initially it may appear that sample size is contributing to the level of functional/formal variability in the assemblages because the EU4 assemblage had the most functional/formal types (n=10). However, nine functional/formal types were noted in the EU2 assemblage. Therefore, a greater factor may be context. While EU4 was a privy, most of the material from the period under consideration in EU2 derived from a trash pit. Both the privy and the trash pit had high frequencies of large sherds, which enabled finer formal/functional distinctions. Although this was also true of the trash pit in EU1, its primary purpose

Table 24. Ceramic Table and Kitchen Ware Summary.

	EU1		EU2		EU3		EU4	
	n	%	n	%	n	%	n	%
Plate	5	15.2	7	18.4	5	19.2	20	22.2
Dish							1	1.1
Bowl	5	15.2	5	13.2	2	7.7	6	6.7
Cup	1	3.0	5	13.2	2	7.7	18	20.0
Saucer	7	21.2	3	7.9	5	19.2	16	17.8
Large Bowl					2	7.7	5	5.6
Serving Bowl			1	2.6	1	3.8		
Lid							2	2.2
Platter			1	2.6			1	1.1
Pitcher			1	2.6	1	3.8	2	2.2
Small Plate			1	2.6				
Mixing Bowl								
Crock			1	2.6			1	1.1
Storage								
Unidentified	15	45.5	13	34.2	8	30.8	18	20.0
TOTAL	33	100.0	38	100.0	26	100.0	90	100.0

appeared to be the disposal of the spring mattress or cushion, and it contained fewer ceramics than the other two units. The results again emphasize the need for vessel reconstruction if additional excavations are undertaken.

Artifact Dating

The Late-Nineteenth/Early-Twentieth-Century Components. As predicted in Franks and Yakubik (1991:211-212), both backmarked ceramics and diagnostic bottle glass proved extremely useful for dating the late-nineteenth/early-twentieth-century archeological contexts. As discussed in Chapter 9, termini post quem could be determined for many proveniences. In addition, sufficient quantities of chronologically diagnostic material were recovered from the privy in EU4 to suggest that date ranges of such deposits may be easily calculated if additional excavations are necessary. Similarly, material from EU1 and EU2 indicates that trash pits may in many cases be reliably dated on the basis of their contents.

Dating the Brickyard Component at 16OR130.

Although mean ceramic dating as a technique tends to provide dates that are too early when utilized with late-nineteenth/early-twentieth-century assemblages, it is generally quite useful in antebellum contexts. Therefore, MCDs were calculated for ceramics from both EU1 and EU2. Initially, all ceramic materials recovered from the units were utilized in the calculations. Then the MCDs were recalculated without inclusion of the late-nineteenth/early-twentieth-century sherds found in the units. In all cases the sample sizes were large enough to be reliable.

The initial MCD for EU1 was 1827.8 (n=301). Removal of the "late" (post-1880) material resulted in a date of 1825.9 (n=293). Historic map data suggests that the brickyard quarters were present in this vicinity at least until 1869 (Figure 6) and that they were removed by ca. 1875 (Figure 9). If we accept ca. 1870 as a terminal date for occupation in the quarters, and if we accept 1826 as the mean date, this would suggest that the quarters (or other habitation) began in this area in 1782. The low frequency of creamware relative to pearlware may suggest that this date is somewhat too early for initial occupation, and that the early MCD results from relict use. Use of relict ceramics would in fact be expected within the quarters complex. A more reasonable initial occupation date suggested by the

creamware/pearlware ratio is ca. 1800 (cf. Yakubik 1990:137-182).

However, the possibility of colonial occupation in this area should not be discounted. It is possible that the creamware frequency is relatively low as a result of the slaves being provided with little tableware until pearlware was popularized. Then too, eighteenth-century coarsewares were recovered from this unit, including a type thought to predate 1780 (Chapter 8).

Mean ceramic dates calculated for EU2 were also early. The MCD for the assemblage as a whole was 1846.6 (n=242). Exclusion of the post-1880 material produced a date of 1836.9 (n=196). Finally, classic ironstone was excluded from the calculation because only one sherd was recovered from undisturbed soils within the kiln. The resulting date was 1826.2 (n=153). As noted in Chapter 9, it appears that the soils within the kiln were prepared. Small (ca. 1-2 cm) ceramic fragments were recovered from within these soils, and larger sherds were rare. The earlier two dates for this unit are not inconsistent with the dates obtained for EU1. Thus, it is likely that the soils used for the construction of the kiln were obtained from the immediate vicinity. This also implies that a light but pervasive layer of antebellum sheet midden is present at the site (Square 122).

"Artifact Patterning" and the Functional Classification

Franks and Yakubik (1991:200-204) rejected the rote examination of artifact functional categories for the elucidation of artifact "patterns" while acknowledging that artifact function should not be entirely ignored during analysis. The functional typology proposed by Franks and Yakubik (1991:200-204) is flexible enough to allow comparison with assemblages analyzed using other systems through the collapse and reorganization of categories. In addition, the dendritic nature of the framework permits the examination of intra-category differences that are generally obscured by more broadly-drawn "functional categories" (cf. South 1977).

Within Franks and Yakubik's (1991) framework, artifacts are broadly classified into two groups: those that reflect consumption and those that reflect production. The consumption group can then be broken into a series of sub-categories, which in turn may be subdivided into increasingly specific units. While the level of specificity is ultimately up to the analyst and

his/her research objectives, the level presented below should be considered typical and useful for most analytic purposed.

The material from the excavation units was classified utilizing the typology. Although the units are not truly comparable due to contextual, size, and diachronic differences, this exercise was undertaken to determine if modifications to the technique were necessary. It immediately became apparent that additional categories were necessary. While the examination of architecture as an artifact as was proposed is still useful, it does not permit the categorization of architectural artifacts such as nails, pane glass, architectural hardware, etc. as the category was originally defined. Therefore the "Housing" subcategory was developed. It in turn was subdivided into architecture and furnishings. An additional new subcategory, "Adornment/Personals" was used for jewelry and currency. Finally, a category was added for a variety of metal hardware that could not be assigned to either the consumption group or the production group. Hence the category of "Miscellaneous Hardware." It is anticipated that additional subcategories or subdivisions within subcategories may be necessary once a larger sample is obtained.

The materials not included within this typology for the purposes of calculating relative frequencies should also be noted. First, architectural debris (brick, mortar, plaster, tile, etc), slag, cinders, etc. were not counted both because of the quantities recovered and the necessity for presenting them in meaningful relative terms. It is far more useful to compare weights per cubic meter of soil (cf. Table 11) than it is to compare frequencies and relative frequencies. Similarly, coal ("Fuel Consumption," Franks and Yakubik 1991:204) was left out of these calculations, as was bone ("Food Consumption," Franks and Yakubik 1991:204).

In addition, some suggested subdivisions within subcategories were not utilized. For example, patent and prescription medicine bottles were not separated. While this is still believed to be potentially useful, few patent bottles were identified in this collection. This division may be more relevant for the analysis of a larger collection.

Consumption group sub-categories utilized were housing, clothing, health/hygiene, adornment/personal, food consumption, beverage consumption, medicine

consumption, leisure activities, and other non-production activities. Each of these were further subdivided, and the subdivisions broken down by material (Table 25). Frequencies were based on minimum item counts in an effort to prevent the glass, ceramics, and nails from overwhelming the items that are generally found in lesser numbers, such as buttons, toys, pipes, etc. The relative frequency of each of the consumption subcategories and the production and hardware categories was calculated. Percentages of the subdivisions within the subcategories were also determined. Finally, the relative frequencies of the materials representing each of these subdivisions were calculated (Table 25).

What is immediately apparent is that architecture dominates all of the collection. While ceramics and glass generally are the most common items in any historic assemblage, the use of minimal vessel counts significantly reduces their frequency. Unfortunately, there is no reasonable means of reducing the count of either pane glass sherds (which ultimately pose less of a problem) or nails. However, utilizing minimum vessel counts for ceramics and glass was useful in that had sherd counts been utilized, most subcategories would have had relative frequencies of less than .1%. Therefore utilizing minimum vessel counts is advised. In addition, the "Housing" subcategory can easily be deleted from the calculations to elevate the relative frequencies of the poorly-represented subcategories (Table 26).

The advantage of large sample sizes is also highlighted by Tables 25 and 26. The privy not only had the most items by far, but the broadest range of material. Thus, privies as waste receptacles do apparently provide a good cross-section of domestic material culture.

The utility of the nested levels of relative frequency calculation is notable in a few categories. One example is bone buttons, which tend to be earlier than ceramic buttons. These only occurred in EU1 and EU2. Also, the percentage of bottle glass in EU1 is low as compared to the other three units (Table 26). This may also have temporal significance, since bottle glass is generally less plentiful in antebellum contexts. Alternatively, it might also suggest a paucity of bottles within the brickyard quarters.

Again, detailed comparisons are not possible at this time given the diversity of the collection contexts

Table 25. Functional Classification Frequencies and Relative Frequencies.

	EU1	EU2	EU3	EU4
HOUSING				
Architecture				
Ceramic	471 73.9%	467 72.1%	729 92.3%	2034 80.4%
Glass	465 98.7%	460 98.5%	721 98.9%	2005 98.6%
Metal				3 0.1%
Stone	125 26.9%	32 7.0%	51 7.1%	679 33.9%
Wood	337 72.5%	428 93.0%	670 92.9%	1322 65.9%
Furnishings				
Ceramic	1 0.2%			1 0.0%
Glass	2 0.4%			1 1.4%
Metal	6 1.3%	7 1.5%	8 1.1%	29 1.4%
		1 14.3%	4 50.0%	1 3.4%
	1 16.7%	4 57.1%	13 44.8%	13 44.8%
	5 83.3%	2 28.6%	4 50.0%	15 51.7%
CLOTHING				
Fasteners				
Bone	13 2.0%	14 2.2%	5 0.6%	44 1.7%
Ceramic	13 100.0%	13 92.9%	5 100.0%	44 100.0%
Glass	3 23.1%	1 7.7%		
Metal	8 61.5%	7 53.8%	4 80.0%	30 68.2%
Shell	1 7.7%			
Footwear				
Leather	1 7.7%	2 15.4%	1 20.0%	14 31.8%
	0	3 23.1%	0	0
		1 7.1%		
		1		

Table 25, Continued.

	EU1		EU2		EU3		EU4		
HEALTH/HYGIENE	Hygiene	5	0.8%	2	0.3%	0	0.0%	15	0.6%
	Ceramic	2	40.0%	0	0.0%	0		1	6.7%
	Grooming	2						1	
	Ceramic	3	60.0%	2	100.0%	0		13	86.7%
	Glass	2	66.7%	2	100.0%			1	7.7%
	Bone	1	33.3%		0.0%			9	69.2%
	Other	0	0.0%	0	0.0%	0		3	23.1%
	Glass							1	6.7%
								1	
ADORNMENT/PERSONAL	Decorative	0	0.0%	3	0.5%	0	0.0%	6	0.2%
	Ceramic	0		3	100.0%	0		4	66.7%
	Glass			1	33.3%			1	25.0%
	Metal			1	33.3%			2	50.0%
	Synthetic							1	25.0%
	Tortoiseshell			1	33.3%				
	Currency	0		0		0		2	33.3%
FOOD CONSUMPTION	Presentation	112	17.6%	92	14.2%	30	3.8%	185	7.3%
	Ceramic	96	85.7%	59	64.1%	24	80.0%	131	70.8%
	Glass	90	93.8%	40	67.8%	22	91.7%	78	59.5%
	Metal	5	5.2%	12	20.3%	2	8.3%	34	26.0%
	Preparation/Storage	1	1.0%	7	11.9%			19	14.5%
	Ceramic	16	14.3%	33	35.9%	6	20.0%	54	29.2%
	Glass	13	81.3%			5	83.3%	16	29.6%
	Metal	3	18.8%	27	81.8%			23	42.6%
			6	18.2%	1	16.7%	15	27.8%	

Table 25, Continued.

	EU1	EU2	EU3	EU4				
BEVERAGE CONSUMPTION								
Alcoholic	9	1.4%	29	4.5%	8	1.0%	80	3.2%
Glass	4	44.4%	5	17.2%	1	12.5%	50	62.5%
Ceramic	4	100.0%	5	100.0%	1	100.0%	47	94.0%
Metal							2	4.0%
Non-Alcoholic	2	22.2%	3	10.3%	2	25.0%	11	13.8%
Glass	2		3		2		11	
Unknown	3	33.3%	21	72.4%	5	62.5%	19	23.8%
Glass	3		21		5		19	
MEDICINE CONSUMPTION								
Prescription/Patent	6	0.9%	7	1.1%	3	0.4%	47	1.9%
Glass	5	83.3%	5	71.4%	2	66.7%	46	97.9%
Bitters	5		5		2		46	
Glass	1	16.7%	2	28.6%	1	33.3%	1	2.1%
	1		2		1		1	
LEISURE ACTIVITIES								
Smoking	11	1.7%	10	1.5%	9	1.1%	31	1.2%
Ceramic	5	45.5%	5	50.0%	0	0.0%	1	3.2%
Toys	5		5				1	
Ceramic	5	45.5%	4	40.0%	7	77.8%	28	90.3%
Glass	2	40.0%	2	50.0%	5	71.4%	17	60.7%
Metal	2	40.0%			1	14.3%	2	7.1%
Stone	1	20.0%	2	50.0%	1	14.3%	7	25.0%
Other							2	7.1%
Ceramic	1	9.1%	1	10.0%	2	22.2%	2	6.5%
Metal					2	100.0%	1	50.0%
Synthetic	1	100.0%	1	100.0%			1	50.0%

Table 25, Continued.

	EU1	EU2	EU3	EU4
OTHER NON-PRODUCTION ACTIVITIES				
Weapons	4 0.6%	3 0.5%	0 0.0%	38 1.5%
Writing	3 75.0%	3 100.0%		9 23.7%
	1 25.0%			29 76.3%
PRODUCTION ACTIVITIES				
Metal	1 0.2%	4 0.6%	0 0.0%	6 0.2%
	1	4		6
MISCELLANEOUS HARDWARE				
	5 0.8%	17 2.6%	6 0.8%	44 1.7%
TOTAL	637	648	790	2530

Table 26. Functional Classification Frequencies and Relative Frequencies Excluding the Housing Subcategory.

	EU1	EU2	EU3	EU4
CLOTHING				
Fasteners	13 7.8%	14 7.7%	5 8.2%	44 8.9%
Bone	13 100.0%	13 92.9%	5 100.0%	44 100.0%
Ceramic	3 23.1%	1 7.7%		
Glass	8 61.5%	7 53.8%	4 80.0%	30 68.2%
Metal	1 7.7%			
Shell	1 7.7%	2 15.4%	1 20.0%	14 31.8%
Footwear	0	3 23.1%		
Leather	0	1 7.1%	0	0
		1		
HEALTH/HYGIENE				
Hygiene	5 3.0%	2 1.1%	0 0.0%	15 3.0%
Ceramic	2 40.0%	0 0.0%	0	1 6.7%
Grooming	2			1
Ceramic	3 60.0%	2 100.0%	0	13 86.7%
Glass	2 66.7%	2 100.0%		1 7.7%
Bone	1 33.3%	0.0%		9 69.2%
Other	0 0.0%	0 0.0%	0	3 23.1%
Glass				1 6.7%
				1
ADORNMENT/PERSONAL				
Decorative	0	3 1.7%	0	6 1.2%
Ceramic	0	3 100.0%	0	4 66.7%
Glass		1 33.3%		1 25.0%
Metal		1 33.3%		2 50.0%
Synthetic				1 25.0%
Tortoiseshell		1 33.3%		
Currency	0	0	0	2 33.3%

Table 26, Continued.

FOOD CONSUMPTION									
Presentation	112	67.5%	92	50.8%	30	49.2%	185	37.3%	
Ceramic	96	85.7%	59	64.1%	24	80.0%	131	70.8%	
Glass	90	93.8%	40	67.8%	22	91.7%	78	59.5%	
Metal	5	5.2%	12	20.3%	2	8.3%	34	26.0%	
Preparation/Storage	1	1.0%	7	11.9%			19	14.5%	
Ceramic	16	14.3%	33	35.9%	6	20.0%	54	29.2%	
Glass	13	81.3%			5	83.3%	16	29.6%	
Metal	3	18.8%	27	81.8%	1	16.7%	23	42.6%	
			6	18.2%			15	27.8%	
BEVERAGE CONSUMPTION									
Alcoholic	9	5.4%	29	16.0%	8	13.1%	80	16.1%	
Glass	4	44.4%	5	17.2%	1	12.5%	50	62.5%	
Ceramic	4	100.0%	5	100.0%	1	100.0%	47	94.0%	
Metal							2	4.0%	
Non-Alcoholic	2	22.2%	3	10.3%	2	25.0%	11	13.8%	
Glass	2		3		2		11		
Unknown	3	33.3%	21	72.4%	5	62.5%	19	23.8%	
Glass	3		21		5		19		
MEDICINE CONSUMPTION									
Prescription/Patent	6	3.6%	7	3.9%	3	4.9%	47	9.5%	
Glass	5	83.3%	5	71.4%	2	66.7%	46	97.9%	
Bitters	5		5		2		46		
Glass	1	16.7%	2	28.6%	1	33.3%	1	2.1%	
	1		2		1		1		

Table 26, Continued.

LEISURE ACTIVITIES									
Smoking	11	6.6%	10	5.5%	9	14.8%	31	6.3%	
Ceramic	5	45.5%	5	50.0%	0	0.0%	1	3.2%	
Toys	5		5				1		
Ceramic	5	45.5%	4	40.0%	7	77.8%	28	90.3%	
Glass	2	40.0%	2	50.0%	5	71.4%	17	60.7%	
Metal	2	40.0%			1	14.3%	2	7.1%	
Stone	1	20.0%	2	50.0%	1	14.3%	7	25.0%	
Other	1	9.1%	1	10.0%	2	22.2%	2	7.1%	
Ceramic					2	100.0%	2	6.5%	
Metal			1	100.0%			1	50.0%	
Synthetic	1	100.0%					1	50.0%	
OTHER NON-PRODUCTION ACTIVITIES									
Weapons	4	2.4%	3	1.7%	0	0.0%	38	7.7%	
Writing	3	75.0%	3	100.0%			9	23.7%	
	1	25.0%					29	76.3%	
PRODUCTION ACTIVITIES									
Metal	1	0.6%	4	2.2%	0	0.0%	6	1.2%	
	1		4				6		
MISCELLANEOUS HARDWARE									
	5	3.0%	17	9.4%	6	9.8%	44	8.9%	
TOTAL	166		181		61		496		

and the unevenness of the sample sizes. However, this typology appears to be a useful analytic tool, and is sufficiently flexible to absorb any necessary modifications.

CHAPTER 11 VERTEBRATE FAUNA FROM HOLY CROSS

by Elizabeth J. Reitz

Introduction

Recent excavations in New Orleans provide an opportunity to review the zooarcheological evidence for animal use in the city, as well as to add to the available data for the city. Zooarcheological analyses of materials from the city have focused on several issues. These include the role of beef and pork in the diet, the role of wild as well as domestic animals in the diet, the role of meat purchased from markets compared to meat from home-slaughtered animals, and the type of tools used in butchering. While none of the samples from nineteenth-century New Orleans are large, they provide some evidence for a consistent pattern of behavior in each of these areas.

Review of Previous Studies

Vertebrate faunal remains from the New Orleans General Hospital site (16OR69) provided data about low to middle class diets in late-nineteenth-century New Orleans (Reitz 1982). Although the collection from this site was small (NISP=1173, MNI=101), it provides some information about these questions. The materials studied represented refuse from the Society for the Relief of Destitute Orphan Boys (1825-1861) and several middle or lower middle class residences which shared the lot with the non-residential Fulton Colored School (1866 to present). Roughly half of the collection was from deposits associated with the orphanage (NISP=527, MNI=37) with the remainder the result of later residential activities (NISP=646, MNI=64).

Domestic individuals comprised 81% of the Hospital site collection. Pigs were somewhat more common than cattle (27% versus 24% of the individuals) and caprines (either sheep or goats) contributed an additional 6% of the individuals. Chickens were as common as cattle, contributing 24% of the individuals. Wild individuals contributed 10% of the individuals, and commensal taxa 9%. Wild taxa included rabbits, squirrels, turtles, and fish while commensal taxa included rodents and dogs. The orphanage subsample was not distinctly different from the residential one, except that domestic mammals were somewhat more common in the orphanage collection.

Elements recovered from 16OR69 indicated that most of the meat came from cuts purchased off the site rather than from animals slaughtered on the property. Sawing was the most common modification observed. Sawed bones constituted 75% of the modified bones. Sawing was observed on 48% of the cattle bones and 24% of the pig bones. There was also a tendency for bones from the head and foot to be somewhat more common in the orphanage subsample.

Excavations in the Algiers Point Levee Setback project area provide additional data from an urbanized area adjacent to New Orleans (Reitz and Ruff 1984). The site was occupied from 1718 into the present, and activities at the site included residential occupations as well as commercial uses. Although the combined sample from the Algiers Point excavations was large (NISP=3493, MNI=142), individual components representing shorter time periods and discrete activities were too small to be considered individually. Hence the data from this site were reported as a single observation. Almost all of the Algiers Point data are associated with nineteenth-century subsistence strategies of a working class residential neighborhood. Of the 142 individuals, only 33 were from deposits dated prior to 1850. Domestic animals included pigs, cows, and caprines (sheep and/or goats) and constituted 78% of the individuals. Pigs contributed 20% of the individuals, cattle 25%, and caprines 10%. Chickens were abundant in the collection (19% of the individuals). A wide range of wild animals were identified (20% of the individuals). Commensal taxa included rodents, dogs, and cats.

The elements recovered from the Algiers Point excavations suggested extensive use of butchered meat rather than *in situ* slaughter of animals raised on the property. More than 60% of the cow bones had been sawed. Pig bones had been sawed in 39% of the cases and 34% of the caprine bones had been sawed.

Work by David B. Kelley (1982) has provided information from an upper class deposit at the New Orleans Post Office site (16OR63). The sample from this site studied by Kelley was also small (NISP=1495, MNI=69). The data are primarily from a sample of residential deposits associated with two mid-nineteenth century upper middle class households (lower privy and cooling cellar deposits), although some materials are from a Creole household which was on the property between 1908 and 1915 (Kelley 1982:5-55/5-56). The

lower privy and cooling cellar provided most of the sample (NISP=1306, MNI=55). In these deposits, Kelley found a heavy reliance upon domestic animals. These were predominantly pigs (9% of the individuals) and cattle (9% of the individuals), although caprines constituted an additional 6% of the individuals. Chickens were also a significant part of the diet (16% of the individuals). Wild resources contributed 49% of the individuals, with marine fishes being more prevalent than other wild resources. Commensal taxa included rodents and a human. Excluding the human, rats contributed 9% of the individuals.

Kelley found that most of the domestic animal elements were from meaty portions of the skeleton. Only ten cow teeth were reported. Some elements from the lower leg were also recovered for all three domestic mammals, although they were not common. Many of the elements were from expensive cuts of meat and showed signs of butchering, including evidence that a saw was routinely used. Kelley interpreted these data to indicate purchase of meat from butcher shops rather than *in situ* slaughter.

Data from these three sites suggest that New Orleans faunal collections should share some common features. One of these is a high percentage of cattle and pig remains, with cattle at least as common as pigs, if not more so. Caprine remains should also be recovered. In addition, wild individuals should be identified in New Orleans' collections, although the percentage may be highly variable. Wild fauna should include opossum, rabbits, squirrels, raccoons, deer, turkeys, ducks, turtles, and marine fishes. Use of wild fauna may be a marker of higher socioeconomic status. Commensal taxa, particularly rats, should also be present. Butchering marks, especially evidence of sawing, should be common on domestic animal remains. Evidence of purchases made in markets should be seen in an uneven distribution of elements from the skeleton. In particular, there may be no teeth in New Orleans' collections and few bones from the lower leg. Bones from the more meaty portions of the skeleton should be common in faunal samples from New Orleans.

Materials and Methods

The materials discussed in this chapter were excavated from contexts discussed in Chapter 9. They include fauna collected from a privy (Excavation Unit 4 and Extensions) and from an area where an as yet

unidentified structure formerly stood (Excavation Unit 3). The privy materials were associated with a combined store and residence that was occupied by a white day laborer and his wife, who ran a notions store at this address, in 1900. In 1910, a white shipping clerk and his family lived here. The materials from Excavation Unit 3 were probably associated with an African-American household which occupied the lot between about 1880 and 1910. The materials were recovered using a 1/4-inch mesh.

The vertebrate materials recovered were examined using standard zooarcheological methods. Identifications were made by Daniel C. Weinand using the comparative skeletal collections of the Zooarcheological Laboratory, Museum of Natural History, University of Georgia. Bones of all taxa were counted to determine the relative abundance of the species identified. A record was made of identified elements. Age, sex, and bone modifications were noted when observed. The elements identified as well as modifications were sketched to facilitate analysis. Where preservation allowed, measurements were taken following the guidelines established by Angela von den Dreisch (1976). These measurements are presented as Table 27. The Minimum Number of Individuals (MNI) was determined based on paired elements and age. In calculating MNI, faunal materials recovered from the two excavation units were considered separate analytical units.

While MNI is a standard zooarcheological quantification medium, the measure has several problems. MNI emphasizes small species over large ones. This is easily demonstrated by a hypothetical sample which consists of 82 catfishes and only six deer. While 82 catfishes represent a larger number of individuals, one deer might supply a substantially larger meat yield. A further problem with MNI is the inherent assumption that the entire individual was utilized at the site. From ethnographic evidence we know that this is not necessarily the case, particularly in regard to large animals and where meat was redistributed (White 1953). Deposits from turn of the century urban contexts are also likely to contain some meat purchased from markets, in which case MNI may be irrelevant. Additionally, MNI is influenced by the manner in which data from archeological proveniences are aggregated during analysis. The aggregation of separate samples into one analytical whole, or the "minimum distinction" method (Grayson 1973), allows for a conservative estimate of

Table 27. Fauna Measurements for EU3 and EU4.

Taxon	Element	Dimension	Measurement, mm
<i>Sus scrofa</i>	Radius	Bp	24.18
Anatidae	Coracoid	Bp	12.15
	Ulna	Bp	11.51
	Tibiotarsus	Dip	16.90
<i>Gallus gallus</i>	Humerus	Bd	14.51
	Radius	Bd	6.01
	Ulna	Bp	9.32
		Did	8.96,
			10.14,
			10.61
	Carpometacarpus	Bp	12.95
	Femur	Bp	16.27,
			16.75,
			16.92
		Dp	11.72,
			11.89
		Bd	15.32
		Dd	14.65
	Tibiotarsus	Dd	12.98
		Dip	20.86,
			21.71
<i>Meleagris gallopavo</i>	Humerus	Bp	30.14
		Bd	24.41
		GL	112.14
	Tarsometatarsus	Bp	21.30

MNI. On the other hand, a modification of this approach is called for when analysis discerns discrete sample units, as is the case for the Holy Cross materials. Increasing the number of analytical units generally increases the number of individuals estimated. Furthermore, some elements are simply more readily identified than others and the taxa represented by these elements may appear more significant in the species list than they were in the diet.

MNI is also subject to sample size bias. Casteel (1978), Grayson (1979), and Wing and Brown (1979) suggest a sample size of at least 200 individuals or 1400 bones for a reliable interpretation. Small samples frequently will generate a short species list with undue emphasis on one species in relation to others. It is not possible to determine the nature or the extent of the bias, or correct for it, until the sample is made larger through additional work. The materials from Holy Cross represent a limited view of the subsistence activities practiced in the area and should not be viewed as accurately representing all of the diverse activities which occurred there.

Modifications to bones can indicate butchering methods as well as site formation processes. Modifications have been classified as burns, cuts, hacks, sawed, clean-cut, worked, carnivore gnawed, and rodent gnawed. Burned bone may result from exposure to fire when a cut of meat is roasted. Burns may also be inflicted if bones are burned intentionally or unintentionally after discard. Cuts are small incisions across the surface of bones. These marks were probably made by a knife as meat was removed from the bone before or after the meat was cooked. Cuts may also be left behind if attempts are made to disarticulate the carcass at joints. Some marks that appear to be made by human tools may actually be abrasions inflicted after the bones were discarded, but distinguishing this source of small cuts requires access to higher powered magnification than was available during this study (Shipman and Ross 1983). Hack marks are evidence that some larger instrument, such as a cleaver, was used. Presumably a cleaver, hatchet, or axe would have been employed as the carcass was being dismembered rather than after the meat was cooked. The presence of striations on the outer layer of compact bone indicates that the bone had been sawed, presumably before the meat was cooked. Bones recorded as clean-cut were ones which had smooth, clean surfaces such as would be found in bones which had been sawed, but lacked the striations

typical of sawed bones. Such slicing was typically found on bones which have only a thin layer of compact bone on the outer edge where saw striations are usually seen.

Carnivore and rodent gnawing provide evidence of non-human activities at the site. Such gnawing indicates that bones were not immediately buried after disposal. While burial would not insure an absence of gnawing, exposure of bones for any length of time might result in gnawing by scavengers. Gnawing by rodents, and particularly by carnivores, would result in loss of an unknown quantity of discarded bone. Carnivores could include a variety of animals, such as opossums, dogs, foxes, raccoons, and cats. It is presumed that domestic dogs and cats were the primary carnivores involved in modifying the Holy Cross collection, although other agents might also have been involved.

The presence or absence of certain elements in an archeological sample may provide information on butchering practices and site formation processes. The mammalian elements recorded from the features were summarized into categories by body parts. Head category includes all material from bones associated with the cranium and mandible, except loose teeth. The presence of head elements at a site may indicate either the consumption of cuts such as brains or tongue, or the discard of unused refuse. Vertebrae included the scapula, humerus, ulna, and radius. Forefeet include carpals and metacarpals, elements which do not contain much meat and may be evidence of nearby slaughter, skinning refuse, or use of the feet for broth. Hindquarters include the innominate, sacrum, femur, patella, and tibia. The hindfeet include the tarsals, and metatarsals. The category "Feet" contains bones identified only as metapodials and phalanges and which could not be assigned to other categories.

Pig and cow elements are summarized visually in Figures 73 and 74. In these figures distal metapodials and phalanges are entered on the right hind foot. This does not mean they are from the right hindquarter, but rather that the quarter was not determined. While shading of the atlas and axis is accurate, the location of other cervical, thoracic, lumbar, sacral, and caudal vertebrae as well as of ribs is not exact. The last lumbar location is used to indicate otherwise unidentifiable vertebrae rather than lumbar vertebra.

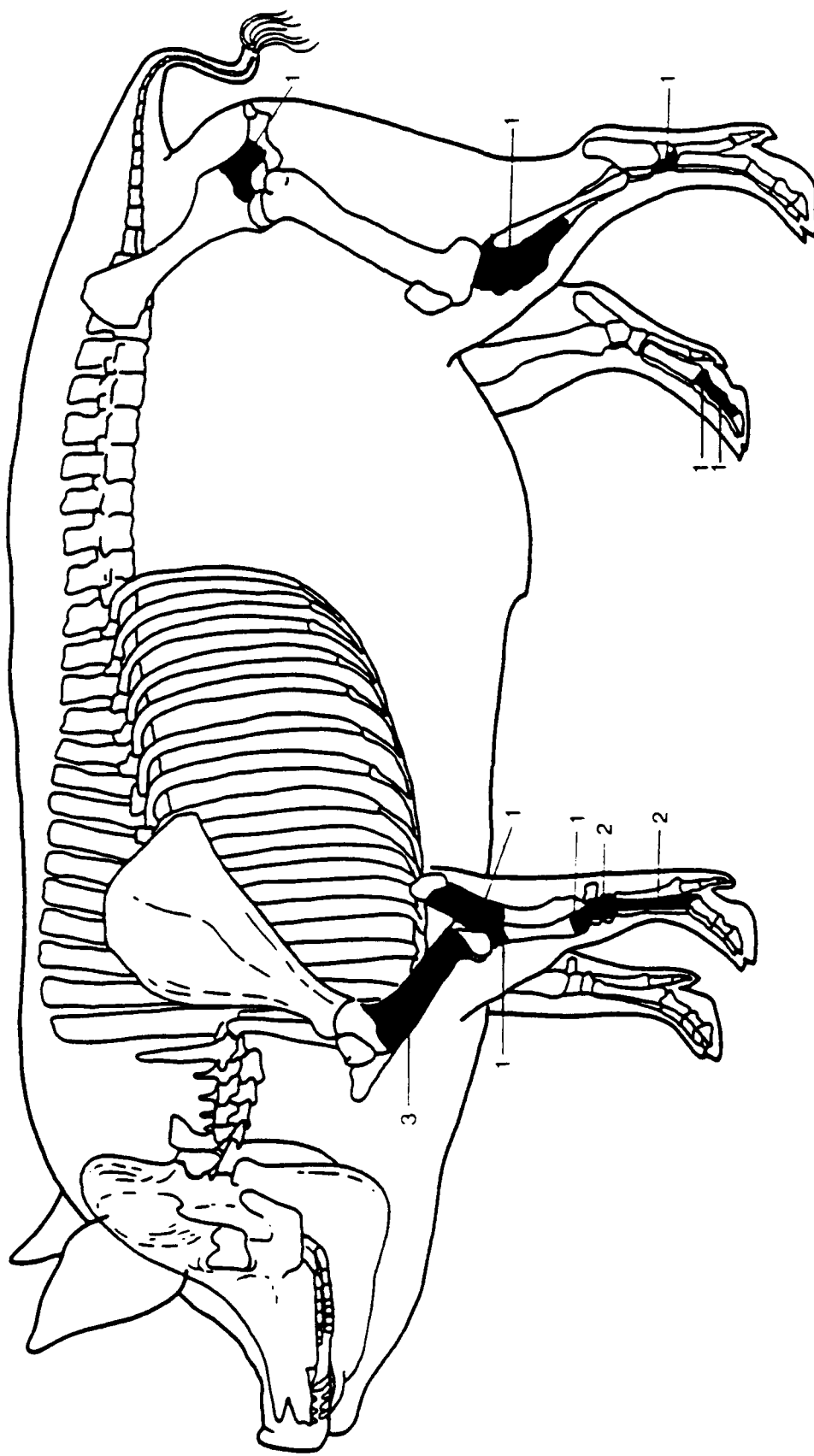


Figure 73. Pig Elements Identified, N=15.

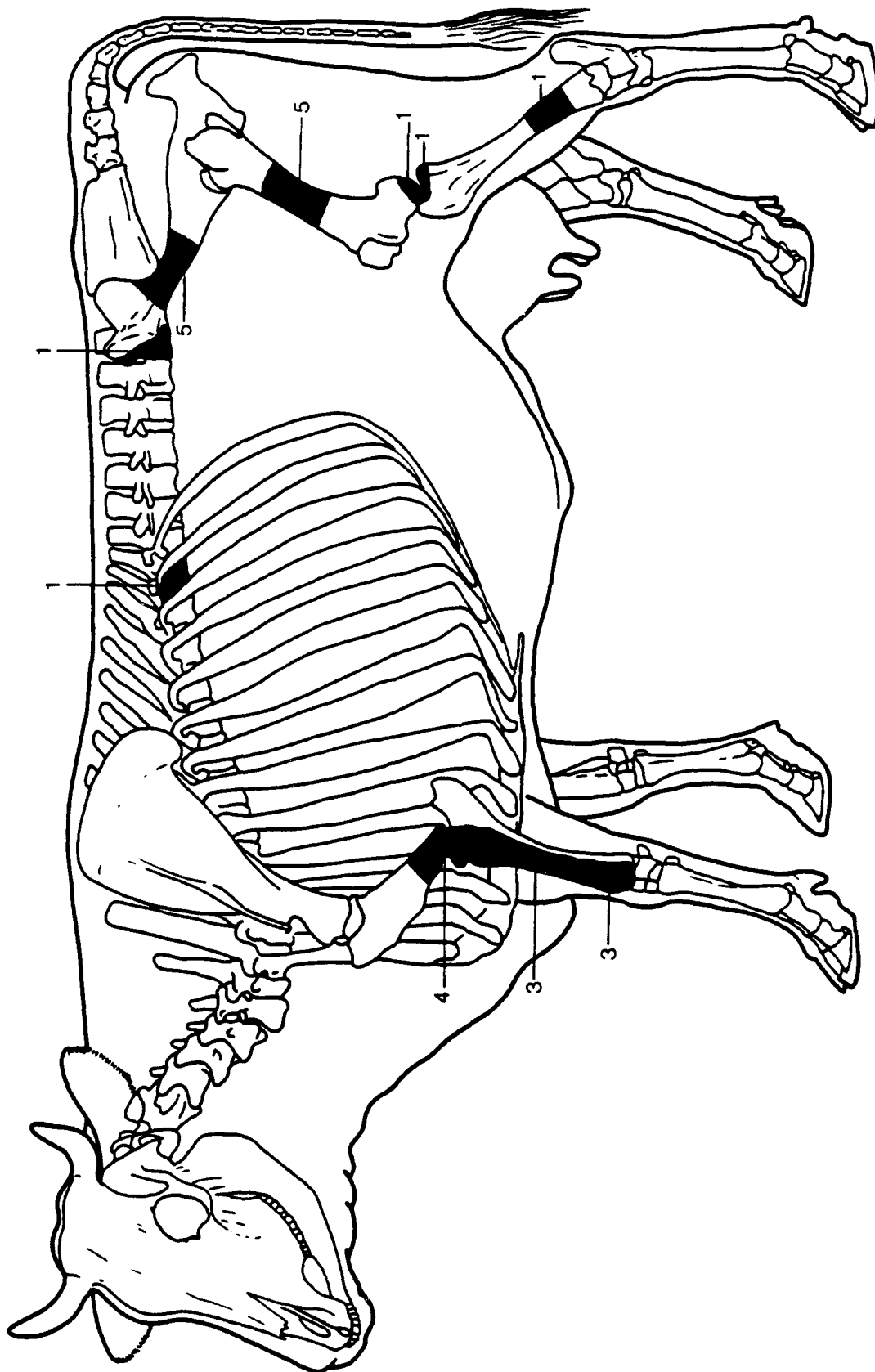


Figure 74. Cow Elements Identified, N=25.

Relative ages of artiodactyls were estimated based on observations of the degree of epiphyseal fusion for diagnostic elements. When animals are young the area of growth between the shaft (diaphysis) and the proximal or distal ends of a bone (the epiphysis) is not fused. This line fuses when growth is complete. While environmental factors influence the actual age at which fusion is complete (Watson 1978), elements fuse in a regular temporal sequence (Gilbert 1980; Schmid 1972; Silver 1970). During analysis, bones identified were recorded as either fused or unfused. The bones were then placed into one of three general categories based on whether fusion occurs early in life, during the months just prior to achieving adult status, or somewhere in the middle. This is most informative for bones which either fuse in the first year or so of life and which are found unfused in the archeological sample or for fused bones which fuse at three or four years of age. Intermediate bones are more difficult to interpret. An element which fuses by 12 months of age and which is found fused archeologically could be from an animal which died immediately after fusion was complete or many years later. The ambiguity inherent in age grouping is somewhat reduced by recording each element under the oldest category possible. In summarizing these data, juveniles are considered to be animals which died before 12 months of age, subadults are ones which died prior to 29 months of age, and adults died after 36 months of age. In some cases there was no indication of the age of the individual although the number of paired bones clearly indicates the presence of the animal. These indeterminate individuals were probably at least 12 months of age when they were slaughtered.

The sex of animals is an important indication of animal use; however, there are few osteological indicators of sex. Males can be determined based on the presence of spurs on the tarsometatarsus of chickens, antlers in deers, and large canine teeth for pigs. Females can be determined based on the absence of such features as spurs and antlers, or the presence of small canines. Unfortunately, these signs are not always present in an archeological sample. Another approach is to compare measurements of identified bones for evidence of bones which fall into a male or female range. However, rarely are there sufficient numbers of measurements to reliably indicate sex.

In order to summarize the data, the species identified from the excavation units have been placed

into faunal categories based on vertebrate class. This is done in order to contrast the percentages of various groups of taxa in the collection. There were two categories of domestic animals and three categories of wild taxa. Two commensal taxa were identified. Animals which are classified as commensal are those which are commonly found in association with humans, but may not have been food items. In the case of Holy Cross the two commensal species are dog (*Canis familiaris*) and cat (*Felis domesticus*). While both of these species may have been consumed, in an American context it is presumed that they were not consumed but became part of the deposit through other means.

Results

The sample from Holy Cross was very small (22 individuals and 812 bone fragments (Table 28). The two excavation unit subsamples are even smaller (Table 29). Further, the two subsamples are unequal in size. The subsample from Excavation Unit 3, associated with an African-American household, is less than half the size of the subsample from Excavation Unit 4, associated with the store/residence. For this reason, comparison of the two subsamples seems unwise. Although occasional reference will be made to the individual excavation units, they will primarily be reviewed together.

The species list contains the remains of a high percentage of domestic mammals and birds, which contributed 50% of the individuals (Tables 28 and 30). Cattle (*Bos taurus*) individuals (N=4) are somewhat more common in the sample than are pig (*Sus scrofa*) individuals (N=3). The only other clearly domestic animals are chickens (*Gallus gallus*), which were as common in the Holy Cross collection as cattle (N=4).

Wild animals contributed 41% of the individuals in the Holy Cross collection (Tables 28 and 30). The only wild mammals identified were rabbits (*Sylvilagus* sp.). These, however, were not a minor portion of the collection since rabbits contributed 14% of the individuals (N=3). The other wild animals were ducks (*Anatidae*) and a turkey (*Meleagris gallopavo*). Ducks contributed 14% of the individuals (N=3) and the turkey contributed 5% of the individuals (N=1). While the rabbits were clearly wild species, the interpretation of the ducks and turkeys as wild is more problematic. There appeared to be no morphological distinction between the bones of these animals and wild comparative skeletons; however, it cannot be ruled out that these

Table 28. Species List for EU3 and EU4.

	NISP	MNI		WEIGHT, GMS
		#	%	
UID Mammal	678			1272.65
UID Small Mammal	1			0.94
<i>Sylvilagus</i> spp.	8	3	13.6	5.80
Rabbit				
<i>Canis familiaris</i>	3	1	4.5	17.64
Dog				
<i>Felis domesticus</i>	1	1	4.5	3.11
Cat				
Artiodactyl	2			6.39
<i>Sus scrofa</i>	15	3	13.6	197.27
Pig				
<i>Bos taurus</i>	25	4	18.2	1043.90
Cow				
UID Bird	41			26.31
Anatidae	5	3	13.6	9.32
Duck				
<i>Gallus gallus</i>	24	4	18.2	34.15
Chicken				
<i>Meleagris gallopavo</i>	4	1	4.5	19.22
Turkey				
UID Fish	4	1	4.5	1.16
Perciformes	1	1	4.5	0.19
Perciform Fish				
UID Vertebrate				5.25
TOTAL	812	22		2643.30

Table 29. Fauna Data for EU3 and EU4.

	EU3		EU4	
	NISP	MNI	NISP	MNI
UID Mammal	177		501	
UID Small Mammal			1	
Rabbit	1	1	7	2
Dog			3	1
Cat	1	1		
Artiodactyl	2			
Pig	3	1	12	2
Cow	3	1	22	3
UID Bird	15		26	
Duck	1	1	4	2
Chicken	8	2	16	2
Turkey	4	1		
UID Fish	1	1		
Perciform Fish			1	1
TOTAL	216	9	596	13

Table 30. Fauna Summary for EU3 and EU4.

	#	MNI	%
Domestic Mammals	7		31.8
Domestic Birds	4		18.2
Wild Mammals	3		13.6
Wild Birds	4		18.2
Fishes	2		9.1
Commensal Taxa	2		9.1
TOTAL	22		

were tamed or domesticated individuals raised either locally or purchased from a vendor. The fish remains were too incomplete for an adequate identification, but do serve to document the use of this resource.

The final faunal category includes commensal animals (Tables 28 and 30). The remains of a dog (*Canis familiaris*) were identified in Excavation Unit 4 and a cat (*Felis domesticus*) was identified in Excavation Unit 3. It may be significant that no rodents were found in the Holy Cross material.

Modifications were found on 16% of the bones examined (Table 31). While burned, cut, and hacked bones were observed, most commonly the bones were sawed (N=94). If the clean-cut bones also are considered sawed, the percentage of modified Holy Cross bones which were sawed is 80%. Taking into account the different sample sizes, sawed and clean-cut bones were more common in the subsample from Excavation Unit 4 (85% of the modified bones) than they were in the subsample from Excavation Unit 3 (64% of the modified bones). A worked bone was recovered from Excavation Unit 3, Level 3. This bone had been sawed and drilled, as well as burned. It also had rust stains, suggesting that it had been the handle for a tool. Further evidence for the presence of carnivores in both subsamples is found in the presence of five bones in each subsample which had been gnawed by carnivores. Some evidence of rodent activity is also found in the modified bones. One bone in Excavation Unit 3 and three bones in Excavation Unit 4 had been gnawed by rodents.

Study of the elements identified for the mammals suggests a great deal of skeletal incompleteness for most taxa (Table 32). Although the rabbits appear to be most complete, these eight bones represents the remains of at least three individuals. The single skull fragment was a mandible recovered from Excavation Unit 3. The two individuals in Excavation Unit 4 were represented by left tibiae. The dog was identified from three femur fragments in Extension 1, Level 3 (privy fill). These probably represent a single bone, but could not be cross-mended. The cat was identified from a single tibia fragment in Level 1.

Probably of most interest is the uneven distribution of elements from the pig and cow skeletons (Table 32, Figures 73 and 74) and the high numbers of these bones which had been sawed. The low numbers of ribs and vertebra are probably an artifact of

Table 31. Fauna Modifications for EU3 and EU4.

	Burned	Cut	Hacked	Sawed	Clean- cut	Worked	Gnawed Rodent	Gnawed Carnivore
UID Mammal	3	3	4	72	11		3	6
Pig			1	1			1	1
Cow				19	2			1
UID Bird								2
UID Vertebrate	1			1		1		
TOTAL	4	3	5	93	13	1	4	10

Table 32. Fauna Elements for EU3 and EU4.

	Rabbit	Dog	Cat	Pig EU3	Pig EU4	Cow EU3	Cow EU4
Skull	1						
Vertebra/Rib	1						2
Forequarter	1			2	4	1	9
Forefeet					4		
Feet				1	1		
Hindfeet	5				1		
Hindquarter		3	1		2	2	11
TOTAL	8	3	1	3	12	3	22

conservative identification. Ten ribs and ten vertebrae were identified as UID Mammal from Excavation Unit 3 while 71 ribs and 22 vertebrae were identified as UID Mammal from Excavation Unit 4. However, no teeth at all were identified in either subsample. Only five of the cow bones were unsawed. Three of the cow humeri had been sawed from the distal portion of the shaft. The unsawed humerus fragment probably was an unfused epiphysis from one of the sawed humeri shaft fragments. While various portions of the cow radius were represented, all of these had been sawed as well. All of the cow ilia had been sawed from the same portion of that bone. With the exception of the distal femur fragment, all of the cow femora had been sawed from the same section of the shaft. The cow tibia shaft fragment had also been sawed. Contrasting this high incidence of sawed cattle bones, only one pig bone was sawed, the proximal end of a humerus shaft fragment.

Some indications of the age of the animals were observed. The dog was an adult at death while the cat could not be aged. At least half of the pig and cow individuals identified in the Holy Cross collection were juveniles or subadults (Tables 33, 34, and 35). One of the pig individuals was a juvenile and two were subadults. One of the cow individuals was a juvenile, one was an adult, and two individuals could not be aged. None of the birds appeared to be young individuals at death.

Discussion

Data from Holy Cross are in many ways dissimilar to those from the three sites reviewed earlier. For example, unlike the other New Orleans collections, the Holy Cross sample contained no caprine remains. Domestic individuals are less common in the Holy Cross sample than anticipated. Although domestic individuals constitute 50% of the estimated individuals in the Holy Cross sample, the range for New Orleans is between 81% and 40%. The Holy Cross sample is at the low end of this range. Although wild fauna comprised a higher than average percentage of the assemblage (41% compared to a range of 10% and 49%), the only wild mammals identified were rabbits. Another way in which the Holy Cross sample differs from the other New Orleans' collection is in the absence of rodents in the Holy Cross sample. However, the identification of rodent gnawing on some Holy Cross bones clearly indicates that rodents were present at the site. It is possible that these differences reflect socioeconomic status, other

Table 33. Epiphyseal Fusion, Pig, EU3 and EU4.

	Unfused	Fused	TOTAL
Early fusing:			
Humerus, distal	2		2
Radius, proximal	1		1
Acetabulum			
Metapodials, proximal			
Phalanx, proximal		1	1
Middle fusing			
Tibia, distal			
Calcaneus, proximal			
Metapodials, distal	1		1
Late fusing			
Humerus, proximal			
Radius, distal	1		1
Ulna, proximal	1		1
Ulna, distal			
Femur, proximal			
Femur, distal			
Tibia, proximal	1		1
TOTAL	7	1	8

Table 34. Epiphyseal Fusion, Cow, EU3 and EU4.

	Unfused	Fused	TOTAL
Early fusing:			
Humerus, distal	2	1	3
Radius, proximal			
Acetabulum			
Metapodials, proximal			
Phalanx, proximal			
Middle fusing			
Tibia, distal			
Calcaneus, proximal			
Metapodials, distal			
Late fusing			
Humerus, proximal			
Radius, distal		1	1
Ulna, proximal			
Ulna, distal			
Femur, proximal			
Femur, distal			
Tibia, proximal	1		1
TOTAL	3	2	5

Table 35. Fauna Age Estimates for EU3 and EU4.

	EU3		EU4	
	Pig	Cow	Pig	Cow
Juvenile			1	1
Subadult	1		1	
Adult				1
Indeterminate		1		1

subsistence related decisions, or sample bias associated with small sample size. Given the important role of sample size in sample diversity, this explanation must be given priority.

In other respects, the Holy Cross sample is similar to the New Orleans collections reviewed previously. One of the characteristics the Holy Cross sample shares with the other collections is a high percentage of cattle and pig remains. As in the case of the Algiers Point collection, cattle remains and individuals are more common than pig remains and individuals. Another feature found in the Holy Cross as well as other New Orleans samples is the high incidence of sawing as a common butchering practice.

Perhaps the most distinctive evidence for the use of meat purchased from a market as opposed to meat acquired by on-site butchering is the distribution of elements recovered from a site. If a carcass was butchered on the site, one should expect to find a high incidence of what might be termed butchering refuse. This would be composed of elements from parts of the carcass which have less meat on them than other parts of the carcass. While the presence of these less meaty cuts might be evidence of low socioeconomic status or a slaughter house, when found in combination with a large number of bones from meaty cuts such a distribution more likely indicates *in situ* slaughter on a residential lot. All of the New Orleans collections, including that from Holy Cross, contain few elements from the head. In fact these may be absent altogether. While elements from the lower leg have been found at all sites, these have been very rare. This evidence suggests that purchase of meat from markets or other vendor locations was a common habit in nineteenth century New Orleans.

This observation for New Orleans, as well as other locations, has led zooarcheologists to attempt to consider the elements recovered in terms of standard cuts of meat (Hattori and Kosta 1990; Kelley 1982; Lyman 1977; Schulz and Gust 1983). The New Orleans data suggests that the standard references for cuts of meat may not be appropriate to these samples. Rather, there may have been much regional variation before national standards were established. For example, comparison of the elements shown in Figures 73 and 74 in this report as well as Figures 1-35 in the Algiers Point report (Reitz and Ruff 1984) with those presented by Hattori and Kosta (1990), Kelley (1982), Lyman (1977), and Schulz and Gust (1983) clearly indicates that there are

few similarities between the Holy Cross cuts and those of standard reference diagrams for cuts of meat. The only one of these standard cuts for which there may be good evidence in the New Orleans materials is the cut known as the foreshank in beef. This cut includes the distal humerus as well as the entire ulna and radius. This evidence suggests that caution should be exercised when using such standard references to interpret butchering patterns and relative value of cuts of beef, pork, and mutton from archeological materials. Regional variation must be taken into account during such analyses.

Conclusion

Although the Holy Cross sample is small, it provides interesting information on animal use and butchering habits in the City of New Orleans during the late nineteenth and early twentieth centuries. As in other New Orleans samples, cattle remains are at least as prominent in the collection as the remains of pigs. The remains of caprines and domestic animals in general are less prevalent in the sample from Holy Cross than was expected. This could be evidence of socioeconomic factors or, more likely, a reflection of the small sample size. As in other New Orleans samples, sawing was a common butchering technique and purchase of meat was probably more common than home slaughter of domestic livestock.

CHAPTER 12

A RESEARCH DESIGN FOR ARCHEOLOGICAL DATA RECOVERY WITHIN THE STUDY AREA

Introduction

Franks et al. (1991:187-263) presented an archeological research design for test excavations within the study area as shown in Figure 1. It was anticipated that the research design might also be appropriate to guide larger-scale excavations should data recovery become necessary. The present Scope of Services (Appendix I) requested "...excavation of a few selected features... (the equivalent of six 1 x 2 m units)..." predicted to exist in the study area (Scope of Services, Appendix I, p. 5).

Excavation, data analysis, and computerization of historic maps was intended to provide information necessary to refine the earlier research design. The Scope of Services requested the following refinements:

- (a) confirmation that Sanborn maps accurately predict the locations of archeological features,
- (b) determination of whether early nineteenth century remains exist in the study area and assessment of their integrity,
- (c) an estimate of the total number of features in the project area,
- (d) an assessment of integrity and research potential for all archeological resources expected to exist in the study area, and
- (e) estimation of data recovery requirements, i.e., number of lots and features to be excavated, analyses procedures and report requirements (Scope of Services, Appendix I, p. 6).

This chapter presents the requested refinements, although not in the exact order outlined by the above-quoted list. Because the present authors are the same individuals who authored Franks et al. (1991:187-263), relevant sections of the previous report are incorporated with few changes into the chapter.

The study area lies within Management Unit V as defined by Louisiana's Comprehensive Archeological Plan (Smith et al. 1983), a document prepared by the Louisiana Division of Archeology. Twenty-five cultural themes have been identified for the area. Thirteen of these refer to prehistoric lifeways or to protohistoric and historic period Indian groups. The remaining twelve themes deal with the period of historic exploration, colonization, and economic development. The historic period themes which are directly relevant to the project area are "Historic New Orleans" and "Ethnic Enclaves: The African-Americans, Acadians, Germans and Other Immigrants" (Smith et al. 1983:95). The Comprehensive Plan states that:

Beyond the Vieux Carre and prehistoric sites, the city contains a multitude of enclaves, each with a unique and valuable history. The American Sector, Irish Channel, Garden District, Algiers Point, and many other areas provide rich sources of historic archeological information... (Smith et al. 1983:99).

The Louisiana Division of Archeology recently sponsored preparation of a document to guide archeological research within portions of New Orleans. The present study area was not included specifically within those portions of the city. However, some aspects of the document are relevant. It defines "major groups" and "minor groups" in terms of socioeconomic position and activity for the French period, the Spanish period, the antebellum American period, and the postbellum through twentieth-century period (Goodwin et al. 1987:80-243).

Groups which are relevant to the present study area are merchants, urban slaves, postbellum African-Americans, and Germans. Relevant site types include the major class of "Industrial Sites" under which brickyards are identified as a variety and "Residential Sites" (Goodwin et al. 1987:244-289).

This chapter uses those and additional themes, as well as research issues derived from historical archeological projects in other parts of the country to develop hypotheses for mitigative archeological investigations within the study area. For some components, research issues rather than hypotheses are developed because the former are more appropriate given the present state of knowledge of the discipline.

A Prehistoric Component

Previous archeological investigations within urban New Orleans (Chapter 5) have not identified prehistoric sites. Known prehistoric sites in the vicinity of New Orleans such as 16OR40 (Chapter 4) are almost all located in marsh areas. The density of prehistoric sites along the natural levee associated with the presently active channel is low. Also, no prehistoric artifacts were recovered during the course of shovel testing and the excavation of units as reported in Chapter 9. For these reasons, the project corridor (Figure 1) is considered a low probability area for the occurrence of prehistoric archeological resources. Therefore, investigations specifically designed to locate such sites are not recommended.

However, if such a site is located in the course of excavations recommended below, its integrity and significance should be assessed. Also, should the contemplated construction take place within the corridor, then crews associated with heavy machinery and extensive earth-moving should be alerted to the possibility of encountering buried prehistoric remains and the necessity for an archeological assessment of such remains.

The Colonial Period Component

Chapters 6 and 7 presented data concerning the owners of the study area during the French and Spanish colonial periods (ca. 1721 to 1803). Numbers of slaves and probable agricultural activity were discussed therein. No maps are extant to enable a prediction as to the precise location of archeological remains dated to that period. However, previous research in the vicinity of New Orleans indicates that early occupations were generally quite close to the river.

Although the river bankline is relatively stable in this area (Chapter 2), construction of the Inner Harbor Navigation Channel and associated levee alterations may have destroyed early historic period remains. However, Chapters 8 and 9 of the present report discuss recovery of eighteenth-century ceramic wares, primarily in Excavation Unit 1. These wares are probably associated with the early-nineteenth-century Jourdan Brickyard quarters complex, for which specific recommendations are made below. Because this is the only area where possible pre-1800 artifacts were recovered, mitigative data recovery need not include archeological excavations

focused on a colonial period component. However, as noted in Chapter 10, it is possible that the vicinity of the quarters complex represents a locale of pre-nineteenth-century occupation. Excavations there should be conducted with the awareness of that possibility so that such a component can be differentiated. This strategy necessitates hand excavation in 5 cm levels and careful segregation and excavation of all cultural features encountered.

The Second Ursuline Convent Component

As noted in Franks et al. (1991:194), historic maps indicate that buildings associated with the second Ursuline Convent were located south of Dauphine Street and west of Sister Street. Three maps (the ca. 1875 Braun map, the 1896 Sanborn map, and the 1909 Sanborn map) were digitized by the Louisiana State University CADGIS Laboratory in order to determine more accurately the locations of those buildings.

The three maps provide remarkably similar data concerning the location of the main complex of buildings associated with the convent. These would have been situated at the location of the "toe" of land extending outward in a southeasterly direction from the west side of the riverward end of the Inner Harbor Navigation Channel (Figure 1). The various outbuildings associated with the convent (e.g. barns, worker's quarters, laundry buildings, etc.) were located within the present-day channel. No buildings associated with the convent were located within the project corridor as shown in Figure 1. Therefore, if project impacts are confined to that corridor, no excavations focused on the Ursuline Convent are necessary. However, if project plans require impact to the above-described toe of land, test excavations should be conducted there prior to construction.

The Brickyard Component

Chapters 6 and 7 presented evidence that a brickyard was present in the study area by ca. 1812, and described the configuration of that industrial complex for the years 1834, 1835, and 1869. City Directory listings indicate that it was in use through at least part of the 1880s.

Three maps (the 1834 Zimpel map, the 1869 plat associated with the auction sale and subdivision, and the ca. 1875 Braun map) were digitized by the Louisiana State University CADGIS Laboratory in order to determine

more accurately the locations of structures and features associated with the brickyard. Comparison of the 1834 to the 1869 and 1875 maps indicate that some changes were made to the facility. In particular, one of the 1834 kilns were apparently abandoned and two new kilns were constructed between 1834 and 1869 (Chapter 7). However, the locations of the three pug mills or ring pits remained stable.

The CAD-generated overlays indicate that none of the kilns depicted by Zimpel are present within the project corridor as shown in Figure 1. Also, none of the pug mills or ring pits are present within that corridor. Excavation of shovel tests at 5 m intervals and excavation of Unit 2 in Square 122 (16OR130), however, indicate that one of the kilns depicted in 1869 and 1875 is present. Its location is exactly where predicted by the computer-generated overlays, which confirms the accuracy of the 1869 and 1875 maps and validates the utility of the computerized map approach for historic archeology in urban New Orleans. Ceramics recovered from within this kiln suggest a ca. 1850 construction date, which is consistent with the map evidence.

The remains of this kiln represent a significant archeological resource. Brickmaking was one of the few antebellum industries in New Orleans, but no kilns in the area have ever been intensively investigated archeologically. If construction within the project corridor requires subsurface impact at the location of the kiln, then mitigative excavations should be conducted.

One goal should be delineation of the actual size of the kiln because a nineteenth century literature exists that relates size of a kiln to the number of bricks that could be produced. Map evidence is not adequate for a determination of size. Obviously, these data are important for an assessment of the production capability of the Jourdan facility in the late-antebellum and early-postbellum periods. It is possible that the production capability could then be related to the size of the labor force. An extensive nineteenth-century literature exists to discuss the division of labor in brickyards into "gangs," the size and number of which were partially dictated by the size and number of kilns and pits.

Another important research issue is the actual layout of the kiln. Test excavations have yielded

features which suggest functionally-distinct areas within the kiln. This is contrary to historic accounts of brickmaking (Davis 1889), which indicate that there should be little or no differentiation within the kiln in terms of use areas. However, most historic accounts of brickmaking describe British brickyards. It is possible that a distinct French tradition, or even a local New Orleans tradition existed for the manufacture of bricks.

As Chapter 9 has demonstrated, limited excavations do not provide sufficient visibility to enable the interpretation of the kiln features, which would enhance our understanding of the kiln's operation. Therefore, if impact to the kiln on 16OR130 cannot be avoided, extensive hand excavations are recommended. Map evidence (Figures 6 and 9) indicates that the brick kiln measured approximately 20 m x 20 m. Using the CAD-generated historic map overlays, the area shown as formerly occupied by the kiln should be carefully machine-stripped to attempt to locate the outside walls of the kiln. Surface stripping should be no deeper than 10 to 15 cm below surface, and should be terminated immediately if kiln features are uncovered at a shallower depth. At the depth of 10-15 cm below surface, mechanical stripping should be terminated and partially-exposed features, including the kiln walls, should be defined by hand. Once the outside dimensions of the kiln are established and the outer walls are exposed by hand excavation, the kiln (assuming that it does in fact measure approximately 20 x 20 m) should be subdivided into eight 5 m squares. Alternating squares should be hand excavated, so that the end result is a checkerboard configuration. This should permit sufficient visibility to determine the internal layout of the kiln. If a particular kiln feature extends into one of the unexcavated zones and the exposed area of the feature is insufficient to determine its former function, then that feature should also be exposed in the unexcavated zone.

Excavation levels should measure no more than 5 cm in depth, and natural strata should be utilized where present. When natural strata exceed 5 cm, they should be subdivided. This is because features as shallow as 3 cm were noted in test excavations of the kiln. It is recommended that plans be drawn in each square at the bottom of each 5 cm level. This will permit correlation of the features within each of the excavated areas.

Since the primary goal of these excavations is furthering our understanding of nineteenth-century brickmaking in New Orleans, recovery of artifacts should be secondary to the recordation of features. Therefore, artifacts should be collected as observed during excavation, but screening of all excavated soils should not be attempted. It is anticipated that recovered materials would either date to post-subdivision residential occupation and thus be irrelevant to the interpretation of the kiln, or they would provide chronological information redundant to that derived from historic maps and to that provided in Chapter 9. This should not suggest that meticulous notation should not be taken in the field regarding concentrations of coal, cinders, slag, etc, or that these materials should not be collected if the excavator feels justified in doing so given information obtained during excavations. Also, if it is anticipated that the contents of a particular feature might yield evidence of its former function, then the soils should be screened or collected for laboratory processing. In short, screening should be judgmentally utilized.

Computer-generated overlays also indicate that the kiln has been impacted by late-nineteenth/early-twentieth-century residential development. Features postdating the use-life of the kiln should not be excavated as part of the investigations of the kiln. If large areas of disturbance are located either during surface stripping or initial hand excavation, then the zones for hand excavation should be adjusted so as to avoid the disturbed area(s).

In addition to the kiln, computer-generated historic map overlays indicate that drying sheds dating to at least the period 1834 to 1875 were present in the southeast corner of Square 122 (16OR130) and extended across former Chartres Street in this area (Figures 5, 6, and 9). Because brick drying sheds were open structures with posts in the ground, it is likely that little remains of them archeologically. However, this area should be surface stripped to determine if patterned postmolds are present. If postmolds are located during stripping, they should be planned, excavated, and their soils screened through 1/4" mesh. If patterned postmolds are not located during stripping, no further effort is recommended to locate remains of the drying sheds.

As noted above, these excavations are intended to further our understanding of nineteenth-century New

Orleans brickmaking. Thus, artifact analyses should be directed toward the goal of defining functional areas of the kiln. In many cases this will involve comparison of quantities of a variety of materials such as coal, charcoal, slag, daub, and brick recovered or noted during excavation. Similarly, any artifacts recovered that can be definitively associated with the kiln operation should be classified and compared using the functional typology presented below. Intrusive materials from the late-nineteenth/early-twentieth century component may be analyzed separately utilizing techniques outlined for this component, below.

The Deslonde-Delavigne Residential Complex Component

Chapter 7 presented data concerning the Deslonde-Delavigne great house and associated outbuildings (e.g. pigeonnaires, kitchens, storage buildings) which were described in documents related to successions in 1835 and 1869. The outbuildings extant at those dates were depicted on historic maps in 1834, 1869, and 1875. These maps were digitized by the Louisiana State University CADGIS Laboratory in order to determine more accurately the locations of those buildings.

The results indicate that the location of the former great house and associated outbuildings located immediately to its rear are now within the river or the Inner Harbor Navigation Channel, or under the associated levees. The accuracy of the computer-generated map overlays in predicting the location of one of the kilns (above) and of the antebellum quarters complex (below) indicates that locational data for the residential complex under discussion here should also be considered accurate. Therefore mitigative excavations focused on this complex should not be undertaken.

The Quarters Complex

Chapter 7 presented evidence concerning the size of the antebellum slave population associated with the Jourdan Brickyard for the period 1810 through 1850. In 1834, Zimpel (Figure 5) depicted nine structures in three rows that probably represent the quarters complex when approximately fifty slaves were present. This complex was east of the lane that would become Jourdan Avenue. He also depicted a series of structures along the west side of the lane that would become Jourdan Avenue. These structures may have housed either slaves or tenants. At a slightly later date, there were over 100 slaves resident on the property.

This 1834 map was digitized by the Louisiana State University CADGIS Laboratory, and overlays were prepared to illustrate location of the quarters complex relative to present-day features. The results indicated that the northeastern portion of the three rows of cabins was located within Square 122 (16OR130). Shovel tests there yielded larger amounts of antebellum ceramics than was the case for other areas. Excavation Unit 1 was placed in that area to obtain additional data concerning the nature of artifacts present and the integrity of the area.

As demonstrated in Chapter 9, there is clear horizontal patterning of the antebellum ceramics at 16OR130. In addition, the ratios of antebellum to postbellum ceramics recovered in EU1 increased with vertical depth, indicating stratification of deposits. Nevertheless, there was some mixing of early and late material, which was attributable at least in part to the presence of an intrusive trash pit. This made it impossible to determine within EU1 whether non-chronologically diagnostic material (such as bone) derived from the Jourdan brickyard laborers or from the later residents of Square 122. However, EU1 also yielded evidence of features. If uncontaminated features such as adjacent secondary midden deposits or privies are located, these can potentially provide a wealth of information on diet and material culture of urban slaves.

Thus, mitigative excavations in this area should be programmed to maximize the recovery of antebellum period features. Also, an effort should be made to obtain a large sample of antebellum ceramics and any other chronologically diagnostic material that can be associated with the quarters. Therefore, a combined approach of both hand excavation and surface stripping is recommended. First, hand excavation of two 4 x 4 m units or their equivalent in the two concentrations of antebellum ceramics shown in Figure 43 should be conducted. Based on the quantity of antebellum material recovered from EU1, this should yield a collection of approximately 1000 sherds for each unit. This sample should permit adequate characterization of the ceramic assemblage, including formal and functional analyses and minimum vessel estimates. Also, the recovery of two samples from different areas will allow intra-site comparison.

All excavated soils should be screened through 1/4" mesh to maximize the recovery of artifacts. Horizontal provenience control should not exceed 1 m². Vertical control should not exceed 5 cm levels, and natural stratigraphy should be utilized wherever possible.

Ideally, antebellum period features will be discovered during excavation of hand units, but that is impossible to predict. Therefore, in order to increase the sample of antebellum features, the western side of the accessible portion of Square 122 (16OR130) should be mechanically stripped following the excavation of units. Surface stripping should be carefully controlled, and soils should be removed in increments of 5 cm. Features containing antebellum material uncovered during stripping should be planned and excavated in their entirety. During this effort, features of unknown temporal origin should be excavated until a field determination is made that the features actually post-date the quarters. When antebellum features are small, e.g. postmolds and small-sized pits, all fill should be bagged and returned to the laboratory for flotation and wet-screening through 1/4-, 1/8-, and 1/16-inch mesh. Controlled volumes of soil should be removed from larger pits and privies dated to the antebellum period. For trash pits, the recommended volume is five liters. For privies, the recommended volume is 10 liters. Portions of these soil samples should be floated in the laboratory, and the remainder wet-screened through 1/4-, 1/8-, and 1/16-inch mesh.

Remains of this quarters complex are highly significant. They represent a truly unique archeological resource both in the context of New Orleans and of the South as a region. As noted above, the Jourdans were major slave holders in Orleans Parish, and their slave labor force was engaged in industrial production. Such complexes have only rarely been investigated. Also, the historic record provides less information concerning urban slavery, particularly in industrialized contexts, than is the case for agricultural contexts. Then too, regardless of the industrial context, little is known about urban slaves in terms of diet and material culture because of the difficulties of segregating slave/master remains (Castille et al. 1982; Zierden and Calhoun 1990). This is not the case at 16OR130, where the living areas of the brickyard owner and the laborers were segregated.

Thus, artifact analyses within the quarters complex should be directed toward characterization of the

material culture of urban slaves in an industrial context. This should include utilization of a comprehensive ceramic classificatory system such as that presented by Yakubik (1990:Appendix I) in order to facilitate examination both of economic issues and site chronology. Miller's (1980, 1991) economic scale should be utilized, both generally to examine the relative proportions of ceramics of different price level rankings and to calculate index values. The latter requires calculation of minimum number of vessel estimates, and the resulting data should also be utilized to examine vessel form. Similarly, minimum vessel estimates should be calculated for glass in order to investigate issues concerning beverage consumption, use of pharmaceuticals, etc. Artifact groups should also be classified and compared using a flexible functional typology such as that presented below. Finally, rigorous chronological control of all categories of artifacts must be maintained in order to prevent contamination by materials from later components. If uncontaminated or nearly uncontaminated antebellum features or levels are encountered, then faunal analysis should be conducted.

As noted above, in 1834 Zimpel depicted structures along what is now the west side of Jourdan Avenue. Shovel testing on this square (Square 189) yielded a less dramatic concentration of antebellum ceramics (Figure 45), and no test yielded more than 3 antebellum sherds. In addition, CAD-generated overlays of historic maps suggest that late-nineteenth/early-twentieth-century impacts were more severe in this area than in Square 122 (16OR130). Therefore, extensive hand excavations such as these are not recommended for Square 189 (16OR131). However, mechanical surface stripping is recommended on Square 189 for the investigation of the range and nature of features present (below). Should antebellum-period features be located during this effort, they should be planned and fully excavated.

It is possible that a cemetery was present within the study area for the burial of slaves. Barthelemy Jourdan's burial in St. Louis Cemetery No. 1 is documented, and it is likely that the other "masters" were buried in city cemeteries. However, the slave population was large, and Chapter 8 indicates that when inventories were conducted, none of the slaves were above age 48. This suggests a high mortality rate. No evidence exists concerning the location of a slave cemetery. Therefore, excavations solely to locate the anticipated cemetery are not recommended. Rather, all

members of archeological and construction field crews should be aware of its possible presence. If evidence suggestive of a cemetery is recovered, then its presence should be confirmed and a plan for preservation or data recovery developed (see Yakubik et al. 1986 for relevant research issues).

The Late-Nineteenth and Early-Twentieth-Century Component

Introduction. Chapters 6 and 7 and Appendix III present extensive data concerning subdivision of the Jourdan holdings in 1869 and subsequent use of the properties for truck farms, residences, and combined commercial/residential establishments. Many structures associated with post-1869 residences in the area are still standing (Treffinger in Franks et al. 1991:334-345). As part of the present research effort, the Braun map of ca. 1875 and the Sanborn maps of 1896 and 1909 were digitized in order to produce overlays depicting locations of all structures mapped in those years. Appendix III presents correlations between census data and City Directory listings with those structures for the period 1880-1910.

Archeological remains associated with post-1869 occupation of the study area are present. Excavation Units 3 and 4, and to a lesser extent Units 1 and 2, demonstrate that subsurface features associated with the period under discussion in this section are present in both empty squares and occupied lots and that they exhibit the quality of integrity. These features are also significant because they have the potential to further our understanding of the relationship between material culture, class distinctions, and ethnic distinctions in this period. The research issues related to class and ethnicity are discussed at greater length below.

In this context it should be noted also that Chapter 7 and Appendix III demonstrate that a relatively large number of truck farms had been established within the study area by 1880. Development of truck farms here was one of the significant historic events that distinguishes the Holy Cross Historic District from most other historic neighborhoods in New Orleans (National Register Nomination Form). Because their presence contributed to the somewhat unique development of the district, as well as because of their inherent research potential, archeological investigations of some of these

properties would represent an important aspect of mitigative data recovery.

Definitions of the Four Main Groups Present after 1870. Data in Chapter 7 and Appendix III indicate that individual lots within the study area can be classified into four main groups. These are lots associated with: (1) African-American residential households, (2) white residential households, (3) truck farm households, and (4) commercial/residential establishments.

African-American residential households consist of individuals of African-American descent who were classified as "Negro" or "Mulatto" in the census records and who reside together in a single structure or in one-half of a divided (double) structure. White residential households consist of individuals classified as "White" in the census records and who reside together in a single structure or in one-half of a divided (double) structure.

Truck farm households consist of households which reside in structures located on lots that were used for cultivation of commercial garden produce or dairy products. In most cases, these households occupy a single residential structure. However, in a few cases multiple residential structures were present on these properties. Where multiple structures existed, occupants were linked by ties of kinship and/or marriage.

Commercial establishments represent either retail outlets or locales that were used for the production of non-farm goods. In the former case, these establishments are stores run by small proprietors. The structures associated with stores generally included a residential component, and it was here that the proprietor and his or her family resided. In all cases in the study area, proprietors/shopkeepers are white. At least one store not associated with a residential component was present. Commercial establishments represent a minority component because the study area was dominated by simple residences and by truck farms.

Estimate of the Number of Features. One method for estimating the numbers of archeological features present is to examine historic maps of the study area. Unfortunately, the ca. 1875 Braun map appears to show only some of the outbuildings that were present at that date. For instance, the map does not generally depict structures of the size and location that suggests privy

sheds, despite the fact that numerous privy sheds were undoubtedly present. Also unfortunately, the 1896 Sanborn map depicts structures only from the river to the south side of Dauphine Street despite the fact that residential structures and farms were present to the north. Only the 1909 Sanborn shows the entire study area in sufficient detail to allow a prediction concerning numbers of archeological features.

For purposes of estimating features, portions of the study area where truck farms predominate were treated separately from simple residential households and combined commercial/residential locations. Areas where truck farms predominate consist of a portion of Square 232, and the entirety of Squares 301, 302, 343, and 344.

Non-truck farm areas which are largely extant (i.e. not under the levee or in the river or IHNC) include the portion of Square 122 fronting Royal, the portions of Square 189 fronting Jourdan and fronting Dauphine, the eastern one-half of Square 232, and all of Squares 190 and 231. In 1909, there were a total of 49 structures designated as dwellings in this area on the Sanborn Insurance map. Of these, 18 were doubles, suggesting a total of 67 residential units. In addition, there were eight structures designated as stores and six structures marked as stables. The stores were associated with a total of four outbuildings, while there were approximately 78 outbuildings associated with residences. One of the latter was a bakeshop. Interestingly, seven dwellings had no associated outbuildings.

Because of the dates of construction of these structures, reasonable predictions can be made concerning archeological features that might be associated with them. In general, most of the dwellings were probably resting on chain walls or on piers. Both of these are commonly recovered during archeological excavations. In fact, several chain walls were probably encountered in shovel tests within Square 189. Also, the drinking water for many of these residences was probably supplied by cisterns. Brick foundations for cisterns are also commonly recovered during urban archeological investigations in New Orleans.

Finally, a privy pit and associated shed would have been present behind most of the dwellings in the study area in this period. Many of these appear to be mapped on the Sanborn series as small structures at the rear of

lots. Excavation Unit 4 was placed at one of these locations, and demonstrated that a privy was formerly present. However, as noted above, the 1909 Sanborn map does not show an outbuilding behind every dwelling, which suggests that some privies went unmapped. Thus, the number of mapped outbuildings in the study area is probably an underestimate.

It should be noted also that by 1909, a number of dwellings, outbuildings, and other structures had already been replaced. Many of these would be represented archeologically but would not be depicted on a map of structures at any later date. Appendix III discusses the sequence of construction and replacement at each of the lots within the study area in detail.

Finally, many archeological features are not associated with structures. For instance, late-nineteenth- or early-twentieth-century trash pits were encountered in Excavation Units 1 and 2. The units were located on adjacent lots. It is possible, then, that residents of many if not most dwellings were disposing of trash in special-function pits as well as within privies.

In short, there is no way to accurately estimate the number of archeological features that may be present in the squares under discussion. However, the features can be grouped in such a way that reasonable estimates are produced. One group would be all architectural features related to each dwelling or store. Because there are 57 such structures, the anticipated number of features is 57. This would include chain walls, piers, porch supports, etc. Similarly, because it is probable that all residential units mapped in 1909 had associated privies, at least 67 of these were present at that date. That would allow one privy for each residential unit. If most households obtained drinking water from cisterns, one might expect between 49 and 67 cistern bases. Finally, at least some of the other outbuildings mapped are associated with archeological features. For instance, a small outbuilding mapped in Square 231 was the location of Excavation Unit 3, within which a subsurface concentration of artifacts and other cultural materials were encountered. Finally, if one trash pit is allowed for each residential unit, approximately 67 trash pits would be anticipated.

Again, these figures provide estimates only for archeological features associated with structures extant in 1909. As is always the case in urban areas, earlier

features were undoubtedly present below extant ones, and in many instances the latter had undoubtedly impacted the former. For instance, Excavation Unit 2 indicated that a trash pit had been dug through the floor of the kiln.

In 1909, truck farms predominated within the western one-half of Square 232, as well as in Squares 301, 302, 343, and 344. The density of structures here was somewhat lower because much of the area was used for commercial gardening. There were 11 residential structures associated with truck farms, only a few of which were shown as doubles. Also, there were at least eight associated stables and approximately 22 other outbuildings. Some of the stables were shown as units within larger buildings indicating that some structures associated with truck farms served multiple functions.

If predicted features are grouped, one would expect architectural features associated with the eleven residential structures and the eight stables. Features would be anticipated for at least some of the 22 other outbuildings. Some of these would undoubtedly be privies. If there were one privy per residential unit, approximately fourteen privies should have been in use at these truck farm locales.

By 1909, non-truck farm residences were also present within these squares. There were nine of these totaling 12 residential units. Also, there were approximately 13 associated outbuildings. If each residential unit here was associated with a privy at this date, then a total of approximately 12 privies should have been in use.

Shovel tests and excavation units within the study area revealed little evidence of disturbance. Shallow features such as chain walls or cistern bases are the most likely to have been disturbed by later construction. However, infilled privy pits are undoubtedly numerous and undisturbed. Also, excavation Units 1 and 2 suggest that equal numbers of trash pits may be present. It is estimated that approximately 93 privies were in use within the study area in 1909, and it is possible that approximately the same number of trash pits might have been present. Earlier privies and trash pits might already have been infilled by that date.

Use of the Digitized Historic Maps and Additional Shovel Tests to Locate Features. Computer-generated overlays for the ca. 1875 Braun map, the 1896 Sanborn map, and the 1909 Sanborn map have been produced. Excavation Units 3 and 4 indicate that these maps accurately depict locations of structures mapped during the period under discussion in these sections. Both units were placed where the maps predicted structures were formerly located. Subsurface historic features were encountered in both units. The overlays, in combination with additional transit or laser field survey, as well as shovel and auger tests at tight intervals, should be used to locate historic features targeted for excavation (below).

Hypotheses to be Tested for the Late-Nineteenth- and Early-Twentieth-Century Component

Archival research indicates that archeological resources may be present in the study area to allow testing of at least one hypothesis focused on the late-nineteenth to early-twentieth century. Excavations reported in this volume indicate that the archeological resource base is present to enable such testing. The hypothesis is derived from Franks et al. (1991:256-262) with modifications. That document, in turn, relied heavily on approaches formulated by Shephard (1985) for archeological research in Alexandria, Virginia.

Null Hypothesis. Differences in socioeconomic status (as indicated by occupations) are not reflected in the quantity, quality, or variety of items composing the material assemblage of late-nineteenth to early-twentieth-century households located at the periphery of urban New Orleans, nor are these differences reflected in relative frequencies of artifact functional categories as observed in the archeological record.

Alternate Hypothesis. The higher the socioeconomic status (as reflected by occupations) of a late-nineteenth to early-twentieth-century urban household located at the periphery of urban New Orleans, the greater will be the quantity, quality, and variety of possessions composing its material culture assemblage. Also, archeological assemblages of high socioeconomic status households will be distinguishable from those of lower status in terms of relative frequencies of artifact functional categories.

Test for the Hypothesis. The null hypothesis will be supported if households in which male occupations

indicate higher socioeconomic status yield similar numbers of artifacts, as well as artifacts of similar quality (in terms of price) and variety when compared to households in which male occupations indicate lower socioeconomic status.

Control of the Primary Variable (Socioeconomic Status of Households). In the context of a statistical analysis of the relationship between male occupations and ethnicity in five nineteenth-century cities in the northeastern United States and Canada, Hershberg et al. (1973:174) devised an "...occupational classification [that] reduces the welter of individual occupations to manageable analytic categories..." Use of their classificatory scheme would allow placement of households within one of five vertical categories on the bases of occupational data from census and City Directory records.

In order to devise the classification system, Hershberg et al. (1973) examined occupations listed in various censuses dated 1855 to 1861 and then listed the 113 most frequently occurring occupations. Each historian in the study group then independently assigned each occupation a vertical rank on a five-point scale. Ranking was based on the individual historian's personal assessment of the relationship of each occupation to skill/prestige as well as to wealth/wages. Their assessments were in close agreement, and that allowed compilation of a table of occupations with five vertical categories (Hershberg et al. 1973:187). This table is reproduced in Table 36 with additions as necessary for use in the Holy Cross study area. The five vertical categories were defined by Hershberg et al. (1973:179):

Category One includes the professional and high white-collar occupations. Category Two includes the proprietors and low white-collar occupations. Category Three includes the skilled artisans. Categories Four and Five include all unskilled workers with the division between the categories, however, coming along the line of "specified" occupations such as carter or teamster and "unspecified" occupations such as laborer (Hershberg et al. 1973:179).

The system was previously used for investigations within a different New Orleans neighborhood (Castille et al. 1986) as well as during investigations of late-

Table 36. Occupational Rankings (from Hershberg et al. 1973:187) with additions as noted for the Holy Cross study area.

Category I

Clergy, Commission Merchant, Gentleman, Lawyer,
Merchant, Physician

Category II

Agent, Bookkeeper, Broker, Builder, Chemist, Clerk,
Dentist, Druggist, Dry Goods/Fancy, Farmer, Grocer,
Hotel Keeper, Innkeeper, Jeweler, Liquor Dealer,
Manufacturer, Sales Agent, Salesman, Storekeeper,
Student, Tavern Keeper, Teacher, Tobacconist, Victualer

*Additions for Holy Cross: Inspector, Cashier, Credit
Manager, Stenographer, Timber Contractor*

Category III

Baker, Barber, Blacksmith, Boat Captain, Boiler,
Bookbinder, Brewer, Bricklayer, Brickmason, Butcher, Cab
Maker, Carpenter, Carriage Maker, Cigar Maker,
Conductor, Confectioner, Cooper, Cordwaiver, Dealer,
Dyer, Engineer, Gas Fitter, Glass Blower, Hatter,
Joiner, Machinist, Mason, Moulder, Nail Maker, Operator,
Painter, Paper Hanger, Pattern Maker, Peddler, Piano
Maker, Plasterer, Plumber, Printer, Puddler, Saddle
Maker, Saddler, Ship Carpenter, Shipwright, Shoemaker,
Stonecutter, Stonemason, Tailor, Tanner, Tinsmith,
Turner, Typesetter, Upholsterer, Weaver, Wheelwright

*Additions for Holy Cross: Artist, Cabinet Maker, Cistern
Maker, Cotton Sampler, Electrician, Flour Drummer,
Millwright, Sampler, Slater, Steward*

Table 36 (Continued). Occupational Rankings (from Hershberg et al. 1973:187) with additions as noted for the Holy Cross study area.

Category IV

Bartender, Boatman, Carman, Carter, Chair Factory, Coachman, Drayman, Driver, Ferryman, Fisherman, Furnaceman, Gardener, Hostler, Mariner, Porter, Quarryman, Sailor, Seaman, Servant, Teamster, Waiter, Watchman, Yardman

Additions for Holy Cross: Army Private, Broom Maker, Coal Roller, Cook, Cotton Screwman, Fireman, Letter Carrier, Longshoreman, Messenger, Motorman, Pittman, Saw Filer, Saw Mill Fireman, Slaughterhouse Fireman, Stableman, Streetcar Motoneer, Streetcar Motorman, Sugar Boiler, Sugar Maker, Sugar Refinery Fireman, Sugar Weigher

Category V

Farm Laborer, Lab Man, Laborer, Railroad Worker, Waterman

nineteenth and early-twentieth-century sites in Phoenix, Arizona (Henry and Garrow 1982).

Prior to archeological excavations recommended in this chapter, the census and City Directory data should be examined by a historian who is familiar with the scheme used by Hershberg et al. (1973). A number of researchers were involved in that effort, and other historians have worked with the categories since. It is recommended that one of these historians be consulted. That individual's goal should be to devise an index for ranking households within the study area. The rank should consider data related to occupations for all members of the household and should include all available data. Ideally, an index should be devised that would take into account both City Directory and census data because such an index would reflect household status through time. The product of this research would be a vertical ranking of households in the study area.

Control of Other Variables. Ethnicity is one variable which might affect the outcome of the proposed test. Ethnicity can be controlled by comparing artifact assemblages derived from African-American households to those derived from white households for which archival data suggest similar socioeconomic status. One other variable which might affect the outcome is the presence of truck farms. Households engaged in truck farming were composed either of German immigrants or first-generation descendants of German immigrants. Also, activity within lots associated with those households was probably more diverse. This variable can be controlled by obtaining artifact samples of sufficient size from truck farms to allow comparison with both African-American and white households for which archival data suggest similar socioeconomic status.

Other variables that might affect the outcome include length of occupancy and the number of occupants. These are more difficult to control, although Franks et al. (1991:257-260) proposed approaches which should be explored in the course of artifact analyses and comparisons should the need arise.

Archival Research, Excavations, and Data Analyses Recommended to Test the Hypothesis. After the vertical ranking procedure recommended above, ten African-American, ten white, and ten truck farm households should be selected. For African-American and white households, selection should balance the number of lower

status and higher status households in each group. Such a balance is unnecessary for truck farms because these households can be treated as a homogeneous group. It is likely that they would be placed within Category II or Category III in a five-tier ranking system, because as owners of relatively larger properties and as independent participants in the local market economy they would appear to represent higher status households. Combination commercial/residential households should be included within the group (Category II) that encompasses higher status whites.

Ideally then, the selection process will result in five groups of households. These are (1) African-American households of higher status; (2) African-American households of lower status; (3) white households of higher status; (4) white households of lower status; and (5) truck farm households. Again, the goal should be to obtain equal numbers within each group.

Households which exhibit residential continuity by a single family should be selected wherever possible. However, in order to achieve balanced groups, this may not always be possible. Chain of title will be necessary for the various properties under consideration because it will provide information concerning the probable beginning date of occupation, and it will resolve issues related to conflicting addresses in census and City Directory listings. In order to balance status, it will probably be necessary to include some lots occupied by a series of households in the five groups. One other advantage of such inclusion is that it will provide data concerning tenants as well as homeowners.

Once the selection process has been made, including selection of alternate properties, field work should consist initially of an effort to locate three kinds of features within lots occupied by the targeted households. These are privies, trash pits, and the locations of outbuildings of unidentified nature. Use of the computer-generated historic map overlays in combination with field survey and shovel/auger tests at extremely tight intervals (ca. one or two meters) within lots should result in the location of these features. In some cases, such features may be covered over by more recent buildings or by cement/concrete features such as patios. In those cases, it will be necessary to remove such overlying obstructions prior to excavation.

All trash pits, privies, and locations of outbuildings of unidentified nature within the lot associated with each of the households should then be excavated. If no privy is located for any of the targeted properties, then an alternate lot of comparable ethnic and status designation should be selected. Giving priority to the excavation of privies will provide assemblages from like contexts with comparable sample sizes which will facilitate analytical comparisons (cf. Chapter 10). Examination of other types of features such as cistern bases and patios is not recommended because such excavation will not yield data that will enable hypothesis-testing.

Controlled volumes of soil samples from each level within privies and trash pits should be bagged and returned to the laboratory for wet-screening through nested 1/4-, 1/8-, and 1/16-inch mesh. Chapter 9 and Appendix II demonstrate that recovery of small-sized diagnostic artifacts (e.g. beads) will be increased by this process, thereby providing a more reliable basis for comparisons of functional categories (below). Examination of material from 1/8- and 1/16-inch mesh indicates that small-sized faunal remains are present. Analysis of these remains in the course of mitigation will provide more reliable data concerning diet, particularly in terms of quality and variety. For instance, the presence of fish in the diet will be underestimated without such nested screening. Fish represent a potentially important dietary component as a cheap and readily available source of protein. Also, between group comparisons of presence/absence of fish and other small-sized fauna may reflect differences in subsistence strategies. Unfortunately, results of nested screening within EU3 and EU4 indicate that the process of sorting large volumes of 1/16-inch material will be extremely time-consuming. Therefore, it is recommended that only ten liters of fill from each privy level and five liters for each level within trash pits be collected for this process. Finally, two two-liter samples should be collected from each level for flotation to obtain plant remains indicative of diet.

The following sections discuss the analytical methods for artifacts which will provide data to allow statistical comparison between the five groups of households. At minimum, the following comparisons should be made:

- (1) higher status African-American to higher status white

- (2) lower status African-American to lower status white
- (3) higher status African-American to truck farm
- (4) higher status white to truck farm
- (5) higher status African-American to lower status African-American
- (6) higher status white to lower status white

The results of those comparisons should then inform decisions concerning the necessity for sample pooling and/or additional comparisons. The results will represent a test of the hypothesis concerning material culture and socioeconomic status. Also, the procedure will control for ethnicity. Finally, the procedure will provide a characterization of the material culture of the four main groups of households within the study area in the late-nineteenth and early-twentieth century.

Other Recommended Excavations. In addition to the privies and trash pits discussed above, some additional features should be excavated. One of these is the remains of the bakehouse associated with the Riemer property. Shovel testing during the present field effort confirmed the location as predicted by CAD-generated map overlays.

Also, excavations should be conducted at locations of some of the truck farm outbuildings of known and unknown function. One easily accessible stable is at the lot numbered 923-925 Jourdan Avenue (Appendix III). The northern portion of that lot was the location of the Jacob Meyer stable. Historic map overlays indicate that there was no subsequent construction in this area. Shovel tests at 5 m intervals within this lot should yield artifacts associated with the stable as well as with the agricultural area to its rear. This is the only such agricultural area which was not the location of subsequent construction. This exercise is designed to obtain data concerning artifact distribution to allow for comparison with non-truck farm areas (Squares 122 and 189) and with the Gemar lot (Square 232) which were shovel tested in the course of the present effort. Following excavation of these shovel tests, the lot should be surface stripped and all features mapped and hand-excavated.

The other locale where data concerning truck farm layout and structure function could be easily obtained is the Gemar lot. Shovel testing suggests that features with integrity are present in this area. Surface stripping here would allow mapping and excavation of all

features. Hand excavation of all features in the Gemar and Jacob Meyer activity areas discussed in this and the preceding paragraph should provide an adequate sample of the range of archeological features associated with truck farms. As noted above, the presence of these truck farms is one of the distinguishing characteristics of the Holy Cross Historic District. Should additional data be necessary, it is possible that these can be obtained in a different portion of the study area, as discussed in the following paragraph.

It is also recommended that excavations be conducted within one square outside the present study area but possibly within the impact corridor. This is the square bounded by St. Claude Avenue, Jourdan Avenue, Sister Street, and Marais Street. The record of the 1869 subdivision sale indicates that at least one structure was present there. Also, the 1873 map (Figure 8) depicts at least two structures within this square. Thus, it is possible that at least one of these structures dates to the pre-subdivision, antebellum period. At present, the lot is empty with the exception of Sewerage Pumping Station B. At the time the Sewerage and Water Board purchased the lot, it was still being used as a truck farm. After construction of the pumping station, it appears that there was a residence on the square that was occupied by a caretaker. In short, this is an area where antebellum remains may be present. Also, features associated with truck farms may be present in a relatively undisturbed state. Therefore, this square could provide supplemental information as needed in the event of an inadequate sample or the formulation of new research issues in the course of excavations within the Gemar and Meyer properties discussed in the preceding two paragraphs. Initially, shovel tests should be excavated here at 5 m intervals. This should be followed by hand excavation of a single 1 x 1 m excavation unit in each area where antebellum remains are concentrated. The results should be used to assess the degree of mixing, hence integrity within the square. If deposits are stratified, then one 2 x 2 m unit should be excavated within each of the concentrations. Following completion of the units, the square should be carefully stripped and examined for antebellum and truck farm features in the same manner as was recommended for Square 122 and for the Gemar and Meyer (923-925 Jourdan) truck farms.

Additional archeological field work should also be conducted to mitigate the research potential of Square 189. As has been shown in Chapter 9, it appears that

there is a high degree of correlation between locations of subsurface features with locations of structures shown on the various historic maps. Careful mechanical stripping of Square 189 would reveal the location of all features. These should then be mapped, and the results compared with the ca. 1875 Braun map as well as the 1896 and 1909 Sanborn maps. One research goal of stripping and mapping of features is to obtain data to enable map to feature correlation for almost an entire city square for which maps dated from 1834 to 1909 are available. Another goal is to document the number and nature of features not associated with the locations of mapped structures. Mapping of feature locations should be followed by excavation only to the extent necessary to define feature type or function. For instance, Excavation Units 1 and 2 (Chapter 9) indicate that excavation of only a few levels will indicate that many features are trash pits. One other goal is to uncover any antebellum features encountered here. These should be excavated in their entirety as discussed for Square 122 (above). All features which are not associated with postbellum structure locations or which are not postbellum trash pits should be considered possible antebellum features, and hence should be excavated by hand to the extent necessary to confirm or disprove their suspected nature.

Finally, Squares 122, 190, 231, 232, 301, 302, 343, and 344 should be treated as archeological sites on which some of the features are historic standing structures. This treatment is in accordance with current guidelines of the Louisiana Division of Archeology. However, it will not be necessary to excavate architectural features associated with these standing structures. Rather, detailed data should be collected for each structure in the manner recommended by Franks et al. (1991:416-422). This, in combination with stripping of Square 189 would represent mitigation of archeological features associated with historic structures. Also, some of these data would then allow the treatment of historic standing structures as artifacts in the manner discussed below.

Recommended Analyses for the Late-Nineteenth- and Early-Twentieth Century Component

The following presents recommended analytic techniques for the testing of the hypothesis outlined above. The techniques include analyses to enable the comparison of the quality, quantity, and variety of the assemblages from the different groups. Most of these

techniques were initially recommended by Franks and Yakubik (1991), and utilized with the assemblages collected during archeological testing (Chapter 10). The application on the archeological testing assemblages resulted in modifications to the recommendations of Franks and Yakubik (1991).

Vessel Reconstruction. The present study illustrates the importance of vessel reconstruction for thorough analysis. Crossmending and reconstruction will not only facilitate the evaluation of deposition contexts, but it will also aid a number of other analyses. Among these, of course, are formal and functional analyses. Then too, the present study demonstrates the utility of minimum vessel estimates over raw sherd counts. The accuracy of these estimates is considerably increased by reconstruction.

Artifact Functional Typology for the Late-Nineteenth- and Early-Twentieth-Century Component. As noted in Chapter 10, Franks and Yakubik (1991:200-204) proposed the use of a functional typology as a framework for organizing assemblages for comparison. Rote examination of artifact patterning of various functional categories was not recommended. Orser (1989) discussed the inappropriateness of functional-pattern-seeking in plantation assemblages, but his criticisms of the overuse of functional analysis are valid for any historic archeological investigation. That is, the technique is synchronic in perspective and it does not address social and economic interrelationships. In addition, the plethora of modifications to this method have made intersite comparisons, in many cases, problematic if not impossible, thus compromising what is perhaps the most useful aspect of the technique.

This should not suggest that no consideration be given to the functional aspects of archeological collections. Rather, the researcher should look in a flexible manner for differences in the assemblages that may reflect behavior and economic status. For example, it may become apparent that bottles formerly containing different categories of beverages are not randomly distributed among the assemblages of the various classificatory groups. These differences should then receive special consideration, and historical and behavioral explanations of the differences should be sought. A rigorous and thorough description of the artifacts in all cases will simplify this process, and serve to preclude the necessity of reexamination of

assemblages if certain differences become apparent late in analysis.

Castille et al. (1986) took an appropriate first step by abandoning South's (1977) system designed to elucidate "patterns" in the historic archeological record (see also Orser 1988). Comparisons of "functional categories" that are too broadly defined are likely to obscure intra-category differences between households. Also, explanations for perceived "patterns" are difficult, if not impossible, to test. For instance, use of South's (1977) functional categories resulted in definition of a "frontier pattern" in rural parts of the Southeast. However, that same "pattern" has been observed on sugar plantations in Louisiana and at urban sites in New Orleans. It may reflect changing patterns of consumption through the nineteenth century rather than an adaptation of pre-existing lifeways to a particular geographic region or environment (Castille et al. 1986). At present, neither the analytic tools nor the data base exists to determine which, if either, explanation is correct.

Nevertheless, artifacts must be sorted if meaning is to be derived from the archeological record. The framework proposed within Franks and Yakubik (1991:200-204) and modified herein is in many aspects comparable to that used by Castille et al. (1986) for a different New Orleans neighborhood. Again, the intent of this framework is not to force the development and definition of "patterns," but to provide a mechanism for inter- and intra-assemblage comparison.

Artifacts may be broadly classified into two groups: those that reflect consumption and those that reflect production. Consumption may then be broken down into a series of sub-categories. These are (1) housing; (2) clothing; (3) articles reflecting personal hygiene; (4) artifacts reflecting adornment and personal items; (5) articles reflecting food consumption; (6) articles reflecting beverage consumption; (7) articles reflecting the use of medicines; (8) articles reflecting leisure activities; and (9) the ubiquitous "other" category.

Housing. The housing subcategory reflects the need for shelter and some measure of comfort within that shelter. Accordingly, all architecture-related artifacts (nails, pane glass, tile, brick, mortar, etc.) are subsumed under this category, as are furnishings such as drawer pulls, finials, lamp parts, and the like. For practical purposes, architectural debris such as

brick, mortar, plaster, etc. is more easily and usefully compared by weight per cubic meter than expressed as a frequency. Also, as seen in Chapter 10, the sheer volume of nails collected tends to obscure the other subcategories. Therefore, it may be useful to calculate relative frequencies both with and without the housing subcategory.

Broadly speaking, the housing category may also include consideration of standing structures as artifacts. In the late-nineteenth and early-twentieth-century component of the present study area, residential architecture was almost entirely wood-frame. Residential structures can be most simply classified as single or double and as shotgun or other. Floor space can also be ascertained for the structures. A combined approach is recommended that utilizes the 1896, 1909, and 1937 Sanborn maps as well as historic standing structures still present. Use of this approach will provide simple but clear evidence concerning differences between households. Further, the approach is replicable so that comparable results could be obtained in other neighborhoods, whether in New Orleans or elsewhere.

Clothing. Items related to clothing may be separated into three major groups: fasteners, footwear, and fabric. Fabric is unlikely to be preserved, but when it is, it should be described according to type (e.g. silk, cotton), color, and pattern if any. Footwear consists primarily of leather shoe fragments, but may also include laces, eyelets, buckles, and buttons. Fasteners include buttons, snaps, eyelets, hooks and eyes, and buckles. Each of the subgroups should be further divided by composition (metal, bone, ceramic, glass).

Artifacts Reflecting Personal Hygiene. This group differs from that of "medicine consumption" in that items within the health/hygiene group are those routinely utilized by well individuals. Artifacts related to personal hygiene should be initially broken into groups of items reflecting sanitation, such as chamber pots, and items reflecting grooming, such as toothbrushes, dresser sets, perfume containers, and cosmetic containers. In addition, other well-individual, health related items, such as eyeglasses, may be grouped here. Again, the groups should be subdivided by material of composition.

Artifacts Reflecting Adornment and Personal Items. During the present excavations, it was noted that

jewelry and currency did not fit well into any of the categories previously proposed by Franks and Yakubik (1991). Items within this category include small articles that were more likely to have entered the archeological record through loss rather than discard. Currency is included here under the broad category of consumption because although it is the result of production, it is a mechanism enabling consumption.

Artifacts Reflecting Food Consumption. The category reflecting food consumption subsumes several sub-behaviors. These are acquisition, preparation, preservation, and presentation. Information concerning the expression of those sub-behaviors by a particular household can be obtained through artifact comparisons. The classificatory system proposed here is designed to enable those comparisons.

Artifacts related to food consumption consist of (a) actual dietary refuse, i.e. faunal and floral remains; (b) ceramics; (c) glass; and (d) metal. Faunal and floral remains should directly reflect the dietary habits of a particular household, and these should be classified at the lowest possible taxonomic level. Faunal and floral remains should reflect acquisition (e.g. domestic vs feral) and preparation (e.g. roasts vs stews, butchering techniques). Comparison of faunal remains is most useful when undertaken independently of other artifact comparisons, and raw bone counts should not be included in relative frequency calculations. Faunal analysis should be conducted in accordance with the methods used in Chapter 11 with one addition. That is, faunal remains obtained during 1/8" and 1/16" screening should be analyzed along with the material from the 1/4" mesh. As noted above, sampling will be necessary for the smaller size mesh.

Ceramic artifacts related to food consumption fall into several groups. The first of these is tableware, which is related both to presentation and to items consumed. Tableware should be analyzed according to ceramic type (below), decorative style, and vessel shape. The former two are related to presentation, while the latter may provide information on items consumed (see Otto's 1977 comparison of hollow wares and flatwares).

The second major group for ceramic artifacts reflecting food consumption consists of vessels related to food preparation. These would include mixing bowls and similar items. Finally, storage vessels should be

considered as a third group because they reflect preservation. Like tablewares, preparation and storage vessels should be described according to type, shape, and size whenever possible. In the present study, preparation and preservation have been combined, although this presumably would not be necessary with larger sample sizes.

Glass artifacts related to food consumption will consist primarily of either tableware (presentation) or storage (canning) jars. The former are related to presentation, while the latter could provide information on food acquisition and preservation.

Metal related to food consumption will consist of cutlery, tableware, tin cans, pots and pans, and stoves. Cutlery and metal tableware should be grouped under food presentation or, in some cases preparation. Tin cans are likely to reflect acquisition. Pots and pans and stoves are a direct reflection of preparation.

Artifacts Reflecting Beverage Consumption. The primary groups within this subcategory are alcoholic and non-alcoholic beverage containers. Ceramic and glass are the primary materials of artifacts within these groups. The size, shape, and type of a ceramic beverage container generally reflect its contents, thereby providing information on beverage consumption. The same is true for bottles. Beverage consumption is likely to have differed between households, and beverage containers should provide data elucidating those differences. For practical reasons, an "unknown" category should also be utilized.

Artifacts Reflecting Consumption of Medicines. Intake of medicines is a ubiquitous human behavior. By the late-nineteenth century, it is probable that most medicines were obtained from commercial sources. These were contained in either ceramic or glass vessels, and this should be the first level of sub-categorization. Ceramic medicine containers were likely to have held ointments and salves, the use of which may have differed between households. Castille et al. (1986) proposed a dichotomy for glass medicine bottles, consisting of either patent medicine bottles or of pharmaceutical medicine bottles. The dichotomy is a useful one as it is likely to reflect the frequency of physician/druggist consultations vs. reliance on self-prescribed, over-the-counter concoctions. In addition, bitters should also be considered a distinct group within the subcategory.

Artifacts Related to Leisure Activities. Artifacts in this broad category should reflect the nature of leisure activities pursued by various householders. Castille et al. (1986) discuss such artifacts that derive from the activities of adults. Few of these, with the exception of smoking pipes, are anticipated in the archeological record. However, children's toys are commonly recovered. These should be described by type (e.g. marbles, dolls) and by material (e.g. ceramic, stone, or glass marble).

"Other" Artifacts Associated with Consumption. This is a catch-all category for artifacts that are recovered in small quantities from archeological sites and that do not fit in any of the above categories. Within the present study, writing materials (pencils and ink bottles) and weapons (bullets) were included in this category.

Artifacts Associated with Production. The brickyard component of the study area was discussed above. Because it probably reached its final configuration in the antebellum period (Chapter 8), it is not reconsidered here.

Artifacts associated with production in the late-nineteenth-century component of this area are expected to include farm implements, articles related to animal husbandry, and articles related to cottage industries (e.g. smithing, baking, candy-making). Within the present study, a variety of tools and machinery parts were included in this group.

Miscellaneous Hardware. Miscellaneous hardware that cannot be assigned to either consumption or production categories should be considered separately.

Chapter 10 discusses utilization of this typology with data obtained from test excavations. To summarize, frequencies based upon minimum item estimates are calculated for each category, subcategory, group, and material class within each group. Relative frequencies are then calculated for the subcategories and categories, for the groups within the subcategories, and for the material classes within the groups.

Analysis of Ceramic Body Type. Franks and Yakubik (1991:205-206) recommended the use of the term "refined white earthenware" to describe non-vitreous and semi-vitreous late-nineteenth- and early-twentieth-century white earthenwares with the exception of classic

ironstone (see Chapter 8). They further recommended that individual types be distinguished on the basis of decoration (below). However, within the present study, distinctions were made between whiteware, classic ironstone, ironstone, and "modern" ironstone in an effort to refine the ceramic chronology for the period. This did not prove to be an overly time-consuming task, which was the initial reason for suggesting the use of the term "refined white earthenware." Therefore, it is recommended that the distinctions between these body types be made as defined in Chapter 8 of this study.

Two other major categories of ceramic tableware expected from the late-nineteenth/early-twentieth-century contexts within the study area are porcelains and porcelaneous stoneware (hotel china). Both of these should be identified by the ceramic classification utilized during data recovery. While the former has little utility for chronological purposes, the status implications of late-nineteenth/early-twentieth-century porcelain relative to other white tablewares warrant further investigation (cf. Chapter 10; Castille et al. 1986:7/13).

By contrast, porcelaneous stoneware or hotel china may be useful for chronological control, since it was not introduced until the 1880s and may not have been marketed for domestic use until the twentieth century (Majewski and O'Brien 1987:124; Henry and Garrow 1982:466). Again, individual types of both porcelain and porcelaneous stoneware should be distinguished on the basis of decoration.

Utilitarian ceramics (e.g. stoneware, yellowware, brownware) should be classified utilizing a typology which accounts for ware type and surface treatment, such as the paradigmatic classification presented in Chapter 8 and also in Yakubik (1990:125-127). This will often provide functional information in the absence of complete vessels, and thus will facilitate functional analyses.

Analysis of Tableware Decoration. Decoration of late-nineteenth/early-twentieth-century vessels frequently consisted of floral sprays or garlands that edged the vessels. Thus undecorated body sherds do not necessarily indicate that the entire vessel was undecorated. The present study demonstrated that the separation of rim and body sherds for the analysis of decoration produced inaccurate results (Chapter 10).

Instead, it is recommended that analysis of decoration be based on minimum vessel counts.

Decorative techniques that should be considered for tablewares include embossing (relief), transfer-printing, gilding, hand-painting, and decaling. Because these methods frequently were utilized in combination, it is recommended that a hierarchical taxonomy such as that presented by Majewski and O'Brien (1987) be utilized to describe the individual decorative types. Their taxonomy considers the stages within the ceramic manufacturing process at which the decision to employ a particular decoration was made. For example, the initial decision is to decorate the vessel or not. The next decision is to modify the surface using relief (embossing) or to leave it unmodified. Subsequently, additional decoration (e.g. transfer-printing, decaling) is chosen (Majewski and O'Brien 1987:135-138).

Ceramic Pricing. The economic/status implications of ceramic tableware decoration have received wide attention since the presentation of Miller's (1980) economic scale. While researchers generally have achieved good results utilizing this scale in contexts dating to the first half of the nineteenth century, problems arise when dealing with late-nineteenth-century assemblages comprised almost exclusively of undecorated ironstones (Yakubik in Jones 1990). Miller's (1980, 1991) data end in 1880, but the examination of retail prices for late-nineteenth and early-twentieth-century ceramics indicate pricing continued to be related to decoration (Majewski and O'Brien 1987:133). Unfortunately, no easily and generally applicable scale has been developed from ceramic price lists of the late-nineteenth/early-twentieth century. For example, Henry and Garrow (1982:322-327) have presented index values for cups and saucers, plates, and bowls based on Montgomery Ward and Sears, Roebuck catalogues dating from 1895 to 1927. They provided four separate charts of index values: one each for 1895/1897 and 1900/1909, and two charts for 1927. Decorative methods utilized in scaling vary among these charts other than that undecorated ceramics are in all cases the least expensive.

The Holy Cross study area provides a context in which to examine the economic/status implications of ceramic tableware decoration in the late-nineteenth/early-twentieth-century. Archival data provide good control of the socioeconomic standing of the occupants of various properties (above). Ceramic

information from households of known socioeconomic levels, from like contexts, and comparable sample size may provide clues to the decorative (as well as ceramic body) categories relevant to economic/status investigations. In short, the archeological record might serve to focus archival investigations of ceramic pricing for this time period.

Examinations of retail ceramic prices in the 1908 and the 1909 Sears catalogues (Schroder 1969:349-356; Ventura Books 1979:120-126) illustrate the correlation between ceramic decoration and price and provide an initial framework for the examination of ceramic pricing during archeological test investigations. For example, in the 1909 catalogue, 100-piece sets that were decorated only with embossing were less expensive than those with monochrome overglaze stenciling or decaling. The latter were less expensive than bi- or polychrome decaled (or possibly transfer-printed; the methods of decoration were not always specified) and embossed sets. The addition of gilding on knobs and handles increased prices, and the use of more extensive gilding (i.e. accents on all of the pieces in the set) further elevated costs.

However, the relative cost ranking of decorative elements is somewhat complicated by place of manufacture. For example, in the 1909 catalogue, an embossed, 100-piece set manufactured by Johnson Brothers in England cost \$.17 more than an embossed and decaled set of the same size from the American manufacturer, E.M. Knowles. English manufactured sets were in all cases more expensive than American sets with comparable decoration. While the price of the American manufactured 100-piece sets ranged from \$3.98 to \$8.98, the English sets ranged from \$6.98 to \$11.90.

In addition, while it appears that decaled wares generally were more expensive than monochrome transfer-printed wares at least through the first decade of the twentieth century, Majewski and O'Brien (1987:147) state that by the 1920s, decals were utilized on American low-quality earthenwares. Then too, ceramic body appears to have influenced price. A 100-piece set of embossed semi-vitreous American "porcelain" cost \$1.00 more than a comparable set of American-made "white granite." Unfortunately, as noted above, distinctions between late-nineteenth/early-twentieth-century non-vitreous and semi-vitreous white earthenwares are unclear. However, porcelain is easily distinguished, and it was more expensive than the refined white earthenwares shown in

the 1908 and 1909 catalogues. In 1909, price ranged from \$12.95 to \$16.85 for German and Austrian porcelain, while prices for Haviland porcelain ranged from \$19.98 to \$27.50. Thus, the relative cost of different decorative types in the late-nineteenth/early-twentieth century varied with place of manufacture, with time, and with ceramic body type.

Nonetheless, the prices from the 1908 and 1909 Sears catalogues do suggest a pricing hierarchy. Table 18 presents the price ranges for broad decorative categories illustrated in the two catalogues. As the table illustrates, there is considerable overlap between the prices for each of the categories. Further expansion of the monochrome and polychrome categories to include both gilded and non-gilded wares eliminates much of the overlap (Table 18). In fact, only the prices of embossed and monochrome decorated refined white earthenwares are not mutually exclusive. It should be noted, however, that the \$7.65 price for embossed ceramics was for a single set manufactured in England. All other embossed sets ranged in price between \$3.98 and \$5.89, and thus were priced lower than monochrome decorated sets.

Table 19, then, presents suggested categories to be utilized for price level comparisons. The category "undecorated" has been added at the lowest end of the scale, although no retail prices are available to support this. Since these categories have been constructed based on a limited examination of price information, and because various other factors (above) seem to have also influenced price, these categories should be used only as a starting point for price level comparisons, and they should be adjusted as necessary. In particular, the archival data on the socioeconomic status of the former residents of the study area should be utilized in conjunction with the archeological data to try to establish reliable levels for price comparisons.

As seen in Chapter 10, use of these ceramic price categories demonstrated no significant differences between the assemblages recovered during testing even when modifications were made to the categories. This may have been the result of the use of material from functionally different contexts and uneven sample sizes. Thus the utility of these rankings (Table 19) have neither been confirmed nor disproved, and the scale should be re-examined during data recovery.

Chronological Control for the Late-Nineteenth and Early-Twentieth-Century Component. Investigations herein demonstrated the utility of backmarked ceramics and chronologically diagnostic glass for the dating of archeological contexts. Ceramics in general were only broadly useful for the purpose of chronological control within late-nineteenth and early-twentieth-century contexts in the study area. A few decorative techniques, such as "revival" transfer-printing (after ca. 1870-1880 [Henry and Garrow 1982:300; Majewski and O'Brien 1987:123-124]) and decalcomania (most common after 1900 [Henry and Garrow 1982:302; Majewski and O'Brien 1987:147]), were found useful for temporal ordering. In addition, some ceramic body types, such as porcelainous stoneware (after 1880) also provided chronological information. However, backmarked ceramics were found most useful in establishing termini post quem.

In many cases, bottle glass provided tighter chronological control than ceramics. While manufacture-deposition lag for bottles has been investigated (Hill 1982; Harris 1988), it is generally agreed that at least after the mid-nineteenth century, bottles were discarded more rapidly than ceramics. Manufacturers' marks and datable manufacturing attributes should be utilized to determine termini post quem and date ranges for features identified during archeological investigations.

It is also recommended that date ranges for individual deposits or features should be calculated on all chronologically diagnostic material contained within. This was undertaken informally in the present investigation (Chapter 9). This, combined with calculation of midpoint dates for deposits and features will facilitate assessment of the deposit contexts and comparison of material from different proveniences.

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